## DOCTOR OF CLINICAL PSYCHOLOGY (DCLINPSY)

### Doctorate in Clinical Psychology: Main Research Portfolio

# 1) Critical Literature Review: Effectiveness of training aimed at improving health and social care professionals' attitudes towards people with a diagnosis of personality disorder: a systematic review; 2) Service Improvement Project: Non-violent resistance training for parents of adolescents misusing substances: a mixed-methodology service improvement evaluation; 3) Main Research Project: Investigating the relationship between social anxiety and mental imagery in autistic adults.

Attwood, Juliette

*Award date:*
2018

*Awarding institution:*
University of Bath

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# Research Portfolio Submitted in Part Fulfilment of the requirements for the Degree of Doctorate in Clinical Psychology Volume 1 of 2

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Doctorate in Clinical Psychology

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## Word Counts

| | |
|---|---|
| **Critical Literature Review (excluding tables and references)** | **6112** |
| **Service Improvement Project (excluding tables and references)** | **4778** |
| **Main Research Project (excluding tables, figures, and references)** | **5227** |
| **Executive Summary** | **637** |
| **Connecting Narrative** | **2862** |
| **Total Word Count** | **19,637** |

## Table of Contents

## Table of Tables

**Table of Figures**

## Abstracts


### Critical Literature Review

There is a large and enduring evidence base showing that health and social care professionals are more likely to hold negative attitudes towards people with a diagnosis of personality disorder than people with other mental health diagnoses. Negative attitudes have also been found to negatively impact on care and service provision. This review sought to systemically evaluate training aimed at improving professional attitudes towards people with a diagnosis of personality disorder to determine if 1) training is effective 2) improvements are maintained 3) specific components improve effectiveness 4) length of training influences effectiveness 5) participant characteristics influence effectiveness. Electronic databases PsychINFO, PubMed, EMBASE, Web of Science, and PROQUEST were searched and 20 papers were included. Results show that training is effective and that improvements tend to be maintained at 6-month follow-up, however, effect sizes tend to be small. The results suggest that communicating a psychological model for understanding personality disorder to participants, teaching participants clinical skills for use in their work, and co-delivery by people with personal experience of a personality disorder diagnosis may improve effectiveness. Future research in the form of randomised controlled trials that use validated outcome measures and follow-up participants for at least 6-months is needed.



Keywords: *personality disorder, professional attitudes, mental health stigma, staff training, systematic review*



### Service Improvement Project

Adolescent substance misuse is increasingly being viewed as a systemic problem and several studies have shown the benefit of increased parental involvement. This article describes the evaluation of a 10-week Non-Violent Resistance group parent-training programme delivered within a Young People's Specialist Substance Misuse Treatment Service. 18 participants completed questionnaires before and after the programme, and at 6-8 week follow-up. 8 participants also took part in semi-structured interviews. Measures of parental self-efficacy, family functioning, and goal-based outcomes all showed significant improvement at the end the programme, and improvement in parental self-efficacy remained significant at follow-up. Parents reported experiencing the programme as unique and helpful, and highlighted some challenges. This evaluation provides evidence that NVR parent-training is a useful intervention in this context, however, the generalisability of the data is limited, and further research is needed.

Keywords: *adolescent mental health, substance misuse, non-violent resistance, parent-training, service improvement*

**Main Research Project**

A cognitive-behavioural model of social anxiety proposes that negative observer-perspective mental images in social situations are important maintenance factors. This study investigated whether Highly Socially Anxious (HSA) autistic people would report experiencing mental imagery in social situations more frequently, from an observer-perspective, and as more distressing in comparison to Low Socially Anxious (LSA) peers. 324 autistic adults took part in an online survey, completing standardised measures of anxiety, social anxiety, imagery, and a demographic questionnaire. 31 participants scoring above a specified cut-off on a measure of social anxiety (HSA group) and 31 participants scoring below (LSA group) participated in a telephone interview about mental imagery in social situations. Most HSA and LSA participants reported experiencing mental imagery in social situations, however, the HSA participants reported experiencing it more frequently. HSA participants were also more likely to report experiencing an image of a social situation from an observer-perspective. Observer-perspective imagery of a social situation and feeling an urge to escape or avoid such imagery also added additional variance to social anxiety scores when other potential predictors were controlled for. The findings suggest that imagery work may be helpful in the cognitive-behavioural treatment of social anxiety in autistic people.

Keywords: *autism, social anxiety, mental imagery, Cognitive Behavioural Therapy, CBT*

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**Critical Literature Review - Effectiveness of training aimed at improving health and social care professionals' attitudes towards people with a diagnosis of personality disorder: a systematic review**

**Word count:** 6109 (excluding tables and references)

**May 2018**

**Internal Supervisor:** Dr Megan Wilkinson-Tough

**External Supervisor:** Dr Sinead Lambé

**Target Journal:** Clinical Psychology Review (Author Guidelines – Appendix A)

This journal was selected because it publishes substantive reviews that advance the practice of Clinical Psychology.

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## Introduction

'Personality Disorder' is a diagnostic construct used to label someone who experiences severe difficulties in self and interpersonal functioning, and who presents with personality traits that are considered pathological in nature (American Psychiatric Association, 2013). These experiences are extremely distressing for individuals and deserving of clinical intervention, however, the validity of the label is an area of debate due to the lack of research able to identify a qualitative difference between personality disorder and normal personality functioning (Livesley, 2003). Research also shows that individuals often meet criteria for more than one personality disorder (Bornstein, 1998; McGlashan et al., 2000). Despite this, the term is still currently used in classification systems and across healthcare settings. An enduring issue is the negative impact that the label can have on people who are in a position of care. National guidelines state that professionals working with people with a personality disorder diagnosis should work in an 'engaging, open and nonjudgemental manner' and foster 'an atmosphere of hope and optimism' (National Institute for Health and Care Excellence, 2009), however, there is abundant evidence that healthcare professionals often hold negative attitudes (Chartonas, Kyratsous, Dracass, Lee, & Bhui, 2017; Sansone & Sansone, 2013; Westwood & Baker, 2010) . A number of studies have found that people with a diagnosis of personality disorder are often seen by professionals as more difficult (James & Cowman, 2007; Lewis & Appleby, 1988; McGrath & Dowling, 2012) and less likely to engage in treatment (Lam, Poplavskaya, Salkovskis, Hogg, & Panting, 2016). Studies have also found that negative attitudes can lead to poorer care including less empathic responses (Fraser & Gallop, 1993; McGrath & Dowling, 2012) and inadequate service provision (James & Cowman, 2007; Lam et al., 2016). Negative attitudes have also been found to be associated with reduced staff wellbeing (Taylor, 2011).

## Theories of attitude development.

Labelling theory (Link, 1987) proposes that diagnostic labels can create negative attitudes and discrimination regardless of behaviour. There is evidence that both nursing staff and clinical psychologists perceive people with a personality disorder diagnosis as generally more dangerous than other clients and report distancing themselves more (Markham & Trower, 2003; Servais & Saunders, 2007). It has also been found that nursing staff, social workers and psychologists all report less optimism about a client's likeliness of engaging with treatment when they are told that they have the diagnosis compared to when they are just presented with a narrative account of behaviour that fits with the diagnostic criteria for a personality disorder (Lam et al., 2016). Attribution theory (Weiner, 1985) proposes that humans naturally look for causal explanations for everyday events, and that these

attributions guide emotional and behavioural responses. Interpreting events as stable or unchangeable is proposed to result in a loss of hope and decreased helping behaviour e.g. ‘why bother, they’ll never change’. Similarly, interpreting events as personally controllable is proposed to result in reduced empathy or anger, and punishment as opposed to help e.g. ‘they know what they’re doing’. In line with this, research shows that nursing staff attribute the negative behaviours of clients with a personality disorder diagnosis as being more stable and controllable than those with other diagnoses, and report less sympathy and more anger (Forsyth, 2007; Markham & Trower, 2003). Corrigan’s Social Cognitive Model (Corrigan, 2000) combines Labelling Theory and Attribution Theory, and proposes that signals, such as mental health labels, trigger stereotyped attitudes that then drive discriminatory behaviour. This model applied to attitudes towards personality disorder would suggest that modifying attributions may be an effective way to improve attitudes.

**Interventions aimed at improving attitudes.**

Various training programmes aimed at improving health and social care professionals’ attitudes towards people with a diagnosis of personality disorder have been developed and evaluated, however, these studies vary in the diagnostic group targeted, the length of the intervention, if a psychological model were used, if there was a skills component, and if the intervention was co-delivered by People with Personal Experience (PPE) of a personality disorder diagnosis. Most studies have found that attitudes improved to some extent following training, however, this poses the question of what components of training are most effective. Corrigan and Penn (1999) identified three categories of interventions aimed at reducing mental health stigma and discrimination: protest, education, and contact. Research has shown that both developing a better understanding through education, and having contact with a person with a mental health diagnosis can improve attitudes in the general population (see Corrigan, 2000 for a review). Corrigan and Fong (2014) compared the effectiveness of education versus contact in the general population and found that the effects of contact were greater than education, however, this cannot be generalised to health and social care professionals. A previous systematic review of interventions aims at improving nurses’ attitudes towards people with a diagnosis of Borderline Personality Disorder (BPD) identified nine papers and concluded that formally training nurses to deliver Dialectical Behaviour Therapy (DBT) (Linehan, 1993) appears to result in improved attitudes, but that the evidence base was too small and weak in methodological quality to reliably suggest that less-intensive training is effective or begin to identify what components are most helpful (Dickens, Hallett, & Lamont, 2016).

**The aim of this review.**

Due to the existence of several additional studies evaluating the impact of training aimed at improving attitudes towards personality disorder more broadly, and the fact that this previous review only included mental health nurses and included training in formal therapy (Dickens et al., 2016), a further systemic review will be conducted to synthesise all the available information and address the following questions:

1) Is training effective in improving attitudes towards people with a diagnosis of personality disorder?
2) Are improvements in attitudes maintained over time?
3) Does including a psychological model, skills component, or PPE increase the effectiveness of training?
4) Does the length of training influence effectiveness?
5) Is the effectiveness of training influenced by gender, professional role, length of experience, prior training, or pre-training attitudes?

Himmelfarb & Eagly (1974) propose a three-component model which describes attitude as a 'relatively enduring organisation of beliefs about, and feelings and behavioural tendencies towards socially significant objects, events or symbols' (Himmelfarb & Eagly, 1974). Most modern definitions of attitude involve belief and feeling components and how these may help predict people's actions (Hogg & Vaughan, 2014), and a meta-analysis of the link between attitude and behaviour found that attitude-behaviour consistency is strong when attitudes are readily accessible, stable over time, and when people have direct experience with the attitude object (Glassman & Albarracin, 2006).This review will therefore be interested in beliefs about, and feelings and behavioural tendencies towards, people with a diagnosis of personality disorder. In line with previous research, this review will be particularly interested in empathy, optimism and motivation to help.

**Method**

The review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher, Liberati, Tetzlaff, & Altman, 2009).

**Literature search.**

Electronic databases PsychINFO, PubMed, EMBASE, Web of Science, and PROQUEST were searched to find relevant titles and abstracts. The final searches were conducted on 26th August 2017. The search words were terms to describe the Participants ("Clinician", "Health Personnel", "Staff", "Professional", "Nurse", "Doctor", "Psychologist", "Worker", or

"Psychiatrist"), in combination with the type of intervention ("Training", "Teaching", "Education", "Psychoeducation", "Psycho-education", "Educational Program", or "Workshop") and the diagnostic group targeted by the intervention ("Personality Disorder"), and also in combination with terms used to define attitude ("Attitude", "Empathy", "Sympathy", "Compassion", "Optimism, "Hopefulness", "Confidence", "Motivation", "Willingness", or "Enthusiasm"). Search terms and syntax were modified as necessary for each database (Appendix B).

**Selection of studies.**

References were imported into EndNote and duplications were deleted. All titles and abstracts were screened and the full-texts of any potentially relevant studies were assessed to determine eligibility for inclusion. Reference sections of included studies were also screened for additional papers and authors were contacted via email to request additional published or unpublished studies.

**Inclusion and exclusion criteria.**

A Participants, Intervention, Comparison, and Outcome (PICO) framework was used to determine the selection of studies for inclusion in the review (Table 1). Dissertations were considered for inclusion. Conference abstracts and papers not written or translated into the English language were excluded. Due to the large number of non-randomised studies in this area, all study designs were included.

**Assessment of quality and risk of bias.**

Most studies identified by preliminary searches were uncontrolled cohort studies. Due to the high likelihood that most included studies would be of low methodological quality, an alternative to more established measures of quality such as those recommended by the Cochrane Group was identified. The Critical Appraisal Skills Programme (CASP) checklist for cohort studies (Critical Appraisal Skills Programme, 2017) was chosen to assess for quality and adapted for the purposes of the study (Appendix C). Studies were awarded 1 point for a score of 'yes', -1 point for a score of 'no', and 0 points for a score of 'can't tell'. A total quality score was then given by summing the scores for each criterion with a possible range of -14 to 14.

Table 1

*PICO inclusion and exclusion criteria for included studies.*

| | Inclusion Criteria | Exclusion Criteria |
|---|---|---|
| Participants | Staff working in health, criminal justice or social care settings | Participants do not include staff working in health, criminal justice or social care settings |
| Intervention | Training that is primarily aimed at improving attitudes towards personality disorder | Training that is not primarily aimed at improving attitudes towards personality disorder, for example, training primarily aimed at delivery therapy |
| Comparison | Some statistical exploration of the impact of the training on professional attitudes (either pre and post measures or between group comparisons) | No statistical exploration of the impact of the training on professional attitudes |
| Outcome | At least one quantitative measure of:<br>• overall attitudes<br>• empathy (empathy, sympathy, compassion)<br>• optimism (optimism, hopefulness, confidence)<br>• motivation (motivation, willingness, enthusiasm) towards people with a diagnosis of personality disorder | No quantitative measure of:<br>• overall attitudes<br>• empathy (empathy, sympathy, compassion)<br>• optimism (optimism, hopefulness, confidence)<br>• motivation (motivation, willingness, enthusiasm) towards people with a personality disorder. |

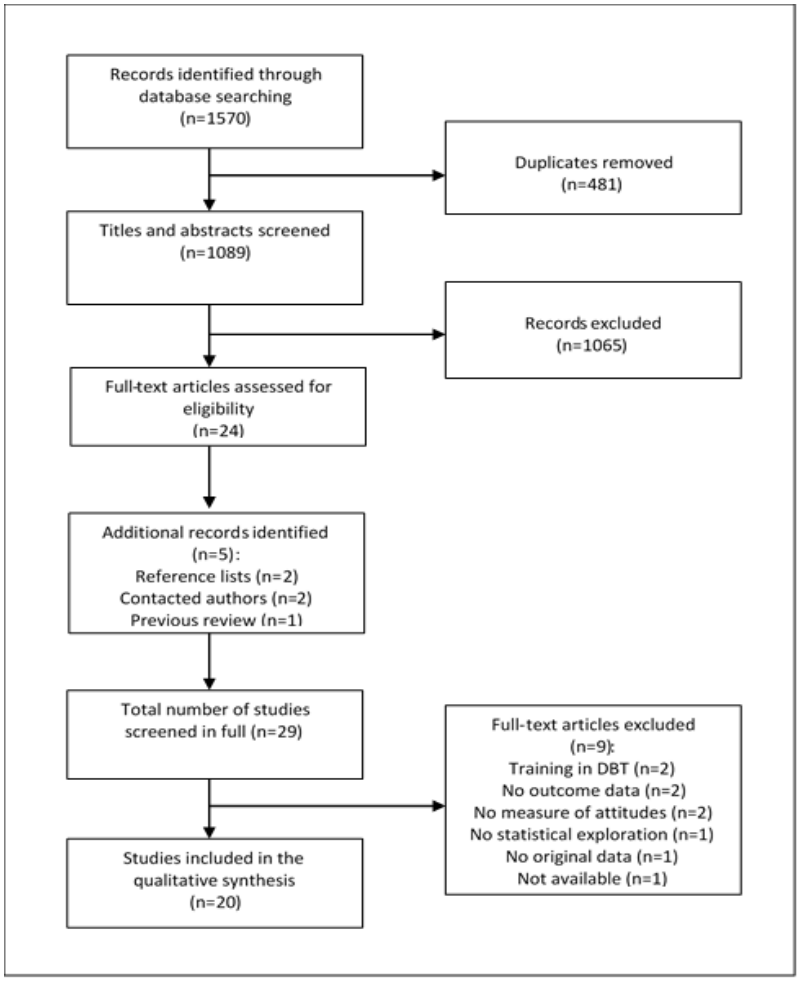
## Results

### Study selection.

Figure 1 provides a flow chart for the selection of eligible studies. The literature search generated 1570 studies, of which 481 were identified as duplicates. After screening of titles and abstracts, 24 papers were read in full and assessed for inclusion which resulted in the exclusion of 9 papers. Manual searching of reference lists of included papers and contacting researchers identified a further four papers, and one additional paper was identified from the previous systematic review (Dickens et al., 2016). In total 20 papers were included.

Figure 1

*Flow chart for the selection of eligible studies*




**Inter-rater reliability.**

To determine inter-rater reliability, 15% of the titles and abstracts were selected using a random number generator and screened to full-text reading by a second reviewer (SL). Interrater agreement was very good with Cohen's k = 0.873 [95% confidence interval = 0.657 to 1.000]. Any discrepancies were resolved through discussion with the second reviewer (SL), and decisions checked with a third reviewer (MW-T), who agreed in all cases.

**Study characteristics.**

Table 2 provides an overview of the study characteristics. Studies were published between 1996 and 2017. Eleven were conducted in the UK (55%), four in the United States of America (20%), three in Australia and New Zealand (15%), one in Canada (5%), and one in the Netherlands (5%). Thirteen were conducted in public health and social care organisations (65%), three in a forensic setting (15%), one in a multi-agency setting

(5%), and three in an unknown setting (15%). Thirteen studies used an uncontrolled repeated measures design (65%), two studies were RCTs (10%), two were randomised non-controlled trials (RnCT) (10%), meaning that all participants were randomised to active interventions, and three were non-randomised controlled trials (nRCT) (15%), with different premises that had not received training acting as control groups. Sample sizes ranged from 14 to 418 and this review reports on data from 2388 participants in total. Participation in the training was voluntary in eleven studies (55%), compulsory in five studies (25%), and unknown in four studies (20%).

**Interventions.**

Ten studies targeted attitudes towards people with a diagnosis of personality disorder (50%) and ten targeted attitudes towards people with a diagnosis of BPD specifically (50%). Most studies evaluated face-to-face teaching except for one study which evaluated a self-instructional booklet (Miller & Davenport, 1996). Three interventions also included virtual learning (Davies, Sampson, Beesley, Smith, & Baldwin, 2014; Ebrahim, Robinson, Crooks, Harenwall, & Forsyth, 2016; Lamph et al., 2014). The length of the intervention varied from 90-minutes to 6-days. Ten interventions were delivered within 1-day (≤ 6 hours) (50%), nine were delivered over 2-days or more (45%), and the length of time spent on the booklet is unknown (5%). Three studies included two different active interventions, making a total of 23 unique interventions that differed in terms of psychological framework. Nineteen interventions were underpinned by a psychological model which was shared with the participants (83%), two were not (9%), and for two interventions this is unknown (9%). Nine interventions used the biopsychosocial model (Linehan, 1993) (39%); Acceptance and Commitment Therapy (ACT) (Hayes, Strosahl, & Wilson, 1999) (9%), Mentalisation Based Therapy (Bateman, Fonagy, & Allen, 2009) (9%), and Cognitive Behavioural Theory (Beck, 1976) were each used in two interventions; and a psychodynamic model, Schema Theory, and Behaviour Theory were each used in one intervention. One study did not specify which psychological model was used. Six interventions included teaching participants clinical skills, for example, therapeutic techniques from DBT (26%), four interventions included teaching participants self-management skills to help them cope with the personal impact of their work, for example, mindfulness (17%), and one intervention included both (4%). In terms of involving PPE in the training, defined as either co-delivery or videos, PPE co-delivered four interventions (17%), and seven interventions showed videos of PPE (30%).

**Outcome measures.**

A total of 16 different measures of attitude were used. A validated measure of attitudes towards personality disorder broadly was used in five studies, namely the Attitude to Personality Disorder Questionnaire (ADPQ: 5 studies) (Bowers & Allan, 2006). Unvalidated measures of attitudes towards personality disorder broadly were used in five studies, namely the Personality Disorder Knowledge and Skills Questionnaire (PD-KASQ: four studies) (Bolton, Feigenbaum, Jones, & Woodward, 2010) and an unvalidated questionnaire was used in one study (Woodward, Jones, & Martin, 2009). A validated measure of attitudes towards BPD specifically was used in seven studies, namely the Attitudes toward Deliberate Self-Harm Questionnaire (ASDHQ: 3 studies) (McAllister, Creedy, Moyle, & Farrugia, 2002), the Borderline Personality Disorder Questionnaire (BPDQ: 1 study) (Reece, 1988), Opening Minds Scale for Health Professionals revised for BPD (OMS-HC-BPD: 1 study) (Kassam, Papish, Modgill, & Patten, 2012), Mental Health Locus of Origin scale revised for BPD (MHLO: 1 study) (Hill & Bale, 1980), and the Suicide Behavior Attitude Questionnaire (SBAQ: 1 study) (Botega et al., 2005). Unvalidated measures of attitudes towards BPD specifically were used in three studies, namely, the Revised Assessment of Attitudes Questionnaire (RAAQ: 1 study) (McIntosh, 1998), and original questionnaires were used in two studies questionnaires (Krawitz, 2004; Shanks, Pfohl, Blum, & Black, 2011). Additional measures of attitude not specific to personality disorder were also used in some studies: the Helping Alliance Questionnaire (HAQ) (Luborsky et al., 1996), the Social Distancing Scale (SDS) (Link, Cullen, Frank, & Wozniak, 1987), the Interpersonal Reactivity Index (IRI) (Davis, 1983), and the Scale to Assess Therapeutic Relationships in Community Mental Health Care – Clinician version (STAR-C) (McGuire-Snieckus, McCabe, Catty, Hansson, & Priebe, 2007). All additional measures were valid and reliable except for the SDS which has poor test-retest reliability.

Secondary outcomes were measured in seven studies (35%). Staff burnout was measured in three studies using the Mashlach Burnout Inventory (MBI) (Maslach, Jackson, & Leiter, 1997), and psychological distress was measured in two studies using the General Health Questionnaire (GHQ) (Goldberg & Hillier, 1979), both of which are valid and reliable measures. Knowledge of MBT was measured in two studies using the Knowledge and Application of MBT Questionnaire (KAMQ) (Williams, Cahill, & Patrick, 2015), knowledge of the biological underpinnings of BPD in one study using an original questionnaire (Clark, Fox, & Long, 2015), and knowledge of BPD in one study (Reece, 1988), none of which have been psychometrically evaluated. Psychological flexibility was measured in one study using the Acceptance and Action Questionnaire (AAQ) (Bond et al., 2011) and consistency between actions and values in one study using the Valued

Living Questionnaire (VLQ) (Wilson, Sandoz, Kitchens, & Roberts, 2010), both of which are valid and reliable measures, and impact on practice was measured in one study using an unvalidated Likert scale (Krawitz, 2004).

**Study quality.**

The full results of the quality assessment for each study are provided in Appendix D. In terms of focus, 80% of studies had a clear focus and 20% had a dual purpose of teaching mentalizing skills (Welstead et al., in press), reducing offending (Bruce, Horgan, Kerr, Cullen, & Russell, 2016), improving clinical outcomes (Stringer et al., 2015), or investigating receptivity for training (Woodward et al., 2009). In terms of representativeness, 45% of studies stated that participants were recruited from services providing care for people with a diagnosis of personality disorder, 35% did not provide this information and 20% had a small sample size. Risk of participation bias was low in 30% of studies because participation was compulsory or participants were randomised to groups including a control condition, 45% of studies were judged high risk because participants had volunteered, and 25% provided insufficient information. It was unclear if exposure to the intervention was accurate in 100% of studies as none had published the intervention protocol. In terms of measurement bias, only 25% of studies used a validated measure, 55% used measures that were unvalidated or had been adapted, and 20% used idiosyncratic measures. Gender, professional role, length of clinical experience, prior training, and pre-training attitudes were identified as potential confounders. Length of experience was considered in 55% of studies, professional role in 33%, gender in 30%, prior training in 25%, and pre-training attitudes in 15%. Only 35% of studies had a follow-up period that was more than six-months, 35% did not have a follow-up period, and 30% included a follow-up period that was less than six-months. Of the thirteen studies that did include a follow-up, only 31% included attrition in the analysis or reported no attrition. 46% reported attrition but did not include this in the analysis and 23% did not report attrition. Believability was judged by considering effect sizes, the possibility of confounding by uncontrolled variables, and overall methodological quality. 50% of studies were judged high risk and only 15% low risk. Only 35% of studies discussed the results in line with previous research.

Table 2

*Study Characteristics*

| Authors; Location | Setting | Study design | Participants | | Interventions | | | | | Outcomes | | | Quality score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | N | Role | Diagnostic Group | Length | Psychological model | Skills component | PPE | Primary measures | Secondary measures | Follow-up | |
| Bruce et al. (2017); London, UK | FS | nRCT | 23 (I=13, C=10) | PPS | PD | ≥ 2 days (6 days) | Y(BT) | Y(CS) | UKN | PD-KASQ | MBI | Pre, post, 6m, 12m | -2 |
| Clark, Fox & Long (2014); Northampton, UK | FS | RM | 34 | MDT-MH | BPD | ≤ 6 hrs (90 mins) | Y(BPS) | N | N | MHLO; IRI | Knowledge' likert scale | Pre, post, 8w | 3 |
| Clarke et al. (2015a); Bournemouth, UK | HSCO | Rn-CT | 100 (ACT=53, DBT=47) | HSC | PD | ≥ 2 days (2 days) | Y(ACT)/ Y(BPS) | Y(SMS)/ Y(CS) | N/N | APDQ; HAQ; SDS | GHQ; MBI; AAQ | Pre, post, 6m | 8 |
| Clarke et al. (2015b); Bournemouth, UK | HSCO | Rn-CT | 106 (ACT=57, PET=49) | HSC | PD | ≥ 2 days (2 days) | Y(ACT)/Y(UNK) | Y(SMS)/ N | Y(V)/ Y(V) | APDQ; HAQ; SDS | GHQ; MBI, VLQ | Pre, post, 6m | 9 |
| Commons-Treloar & Lewis (2008); Australia & New Zealand | HSCO | RM | 99 | MH/EM | BPD | ≤ 6 hrs (2 hrs) | UKN | N | N | ADSHQ | N/A | Pre, post | 4 |
| Commons-Treloar (2009); Australia & New Zealand | HSCO | RCT | 65 (PA=25, CBT=18, control=22) | MH/EM | BPD | ≤ 6 hrs (90 mins) | Y(BPS)/Y(PDy) | N | N/N | ADSHQ | N/A | Pre, post, 6m | 3 |

Table 2

*Study Characteristics continued*

| Authors; Location | Setting | Study design | Participants | | Interventions | | | | | Outcomes | | | Quality score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | N | Role | Diagnostic Group | Length | Psychological model | Skills component | PPE | Primary measures | Secondary measures | Follow-up | |
| Davies et al. (2015); Northwest, UK | HSCO | RM | 162 | MDT-MH | PD | ≥ 2 days (3 days) | Y(BPS/ST) | UKN | Y(CD) | PD-KASQ | N/A | Pre, post, 3m | -3 |
| Ebrahim et al. (2016); UK | HSCO | RM | 181 | RMN/OT | PD | ≥ 2 days (3 days) | Y(BPS) | UKN | Y(CD) | PD-KASQ | N/A | Pre, post, 3m, 6m | 0 |
| Fraser (2001); Arizona, USA; unpublished thesis | HSCO | RCT | 60 (I=30, C=30) | C/SW | BPD | ≤ 6 hrs (4 hrs) | Y(BPS) | Y(CS) | Y(V) | RAAQ | N/A | Pre, post, 1m | 8 |
| Keuroghlian et al. (2016); USA | HSCO | RM | 297 | MDT-MH | BPD | ≤ 6 hrs (1 day) | N | N | Y(V) | 9-item Q (same as Shanks et al. 2011) | N/A | Pre, post | -1 |
| Knaak et al. (2015); Calgary, Canada | HSCO | RM | 191 | MDT-MH | BPD | ≤ 6 hrs (3 hrs) | Y(BPS) | Y(CS) | Y(CD) | OMS-HC (BPD) | N/A | Pre, post | 2 |
| Krawitz (2004); Victoria, Australia | HSCO | RM | 418 | MDT-MH | BPD | ≥ 2 days (2 days) | Y(BPS/PDy/ST) | Y(CS) | Y(V) | 6-item Q | Impact on Practice' likert scale | Pre, post, 6 m | 1 |

Table 2

*Study Characteristics continued*

| Authors; Location | Setting | Study design | Participants | | Interventions | | | | | Outcomes | | | Quality score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | N | Role | Diagnostic Group | Length | Psychological model | Skills component | PPE | Primary measures | Secondary measures | Follow-up | |
| Lamph et al. (2014); Warrington, UK | MAS | RM | 136 | UNK | PD | ≥ 2 days (3 days) | Y(ST) | UKN | Y(CD) | PD-KASQ | N/A | Pre, post, 3 months | -2 |
| Maltman & Hamilton (2011); Nottingham, UK | FS | RM | 67 | PS | PD | ≤ 6 hrs (2 hrs) | Y(CBT) | N | N | APDQ | N/A | Pre, 2m | 2 |
| Miller & Davenport (1996); Ohio/Texas, USA | HSCO | n-RCT | 32 (I=19, C=13) | RMN | BPD | UNK | UKN | N | N | BPDQ | N/A | Pre, 1m | 4 |
| Polnay et al. (2015); Edinburgh, UK | UNK | RM | 16 | PT | PD | ≤ 6 hrs (4 hrs) | Y(MBT) | Y(SMS) | Y(V) | APDQ | KAMQ | Pre, post | 1 |
| Shanks et al. (2011); Arizona, USA | UNK | RM | 271 | MDT-MH | BPD | ≤ 6 hrs (6 hrs) | Y(CBT) | N | Y(V) | 9-item Q | N/A | Pre, post | 0 |
| Stringer et al. (2015); Amsterdam, Netherlands | HSCO | n-RCT | 14 (I=9, C=4) | RMN | BPD | ≥ 2 days (3 days) | N | Y(CS) | N | SBAQ, ADSHQ, STAR-C | N/A | Pre, 5m, 9m | -2 |

Table 2

*Study Characteristics continued*

| Authors; Location | Setting | Study design | Participants | | Interventions | | | | | Outcomes | | | Quality score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | N | Role | Diagnostic Group | Length | Psychological model | Skills component | PPE | Primary measure(s) of attitudes | Secondary measures | Follow-up | |
| Welstead et al. (2017); Scotland, UK; in press | HSCO | RM | 92 | MDT-MH | PD | ≥ 2 days (2 days) | Y(MBT) | Y(SMS) | N | APDQ | KAMQ | Pre, post | -1 |
| Woodward, Jones & Martin (2009); London, UK | UNK | RM | 24 | GPMHW | PD | ≥ 2 days (2 days) | Y(BPS) | Y(CS/SMS) | N | 7-item Q/11-item Q | N/A | Pre, post | -5 |

*Setting:* FS = Forensic Setting; HSCO = Health and Social Care Organisation; MAS = Multi-Agency Setting; UNK = Unknown. *Study Design:* RCT = Randomised-Controlled Trial; RM = Repeated Measures; Rn-CT = Randomised non-Controlled Trial; non-Randomised Controlled Trial = n-RCT. *N:* I = Intervention; C = Control; ACT = Acceptance and Commitment Therapy based; DBT = Dialectical Behaviour Therapy based; PET = Psychoeducation based; PA = Psychoanalytically based; CBT = Cognitive Behaviour Therapy based. *Role:* PPS = Probation Premises Staff; MDT-MH = Multidisciplinary Mental Health Clinicians; HSC = Health and Social Care staff; MH/EM = Mental Health and Emergency Medicine clinicians; RM/OT = Mental Health clinicians and Occupational Therapists; C/SW = Counsellors and Social Workers; PS = Prison Staff; RMN = Mental Health Nurses; PT = Psychiatry Trainees; GPMHW = Graduate Primary Mental Health Workers; UNK = Unknown. *Psychological model:* BT = Behaviour Theory; BPS = Biopsychosocial; ACT = Acceptance and Commitment Therapy; UNK = Unknown; PDy = Psychodynamic; ST = Schema Theory; CBT = Cognitive Behavioural Theory; Mentalisation Based Therapy. *Skills component:* Y = Yes; N = No; CS = Clinical Skills; SMS = Self-Management Skills; UNK = Unknown. *PPE:* PPE = People with Personal Experience; Y = Yes; N = No; V = Video; CD = Co-delivery. *Primary measure(s) of attitude:* PD-KASQ = Personality Disorder Knowledge and Skills Questionnaire; MHLO = Mental Health Locus of Origin Scale; IRI = Interpersonal Reactivity Index; APDQ = Attitudes towards Personality Disorder Questionnaire; HAQ = Helping Alliance Questionnaire; SDS = Social Distancing Scale; ADSHQ = Attitudes towards Deliberate Self Harm Questionnaire; RAAQ = Revised Assessment of Attitudes Questionnaire; OMS-HC (BPD) = Opening Minds Scale for Health Professionals revised for Borderline Personality Disorder; Q = Questionnaire; BPDQ = Borderline Personality Disorder Questionnaire; SBAQ = Suicide Behaviour Attitude Questionnaire; STAR-C = Scale to Assess Therapeutic Relationships in Community Mental Health Care - Clinician version. *Secondary measures:* MBI = Maslach's Burnout Inventory; GHQ = General Health Questionnaire; AAQ = Attitudes and Actions Questionnaire; VLQ - Valued Living Questionnaire; Knowledge and Application of Mentalisation Based Therapy Questionnaire.

**Primary outcomes.**

Table 4 provides an overview of the study outcomes. Effect sizes were calculated where possible but adequate information was not available for three studies (Bruce et al., 2016; Ebrahim et al., 2016; Woodward et al., 2009). The guidance provided by Dunlap et al. (1996) was followed and the pooled standard deviation was used so as not to inaccurately inflate effect size. Due to the wide variability in the methodologies and outcome measure used by the studies, a meta-analysis would not have been appropriate and a narrative synthesis incorporating effect sizes and study quality was selected as an alternative. Using Cohen's guidelines, effect sizes of 0.2 and above were considered small, between 0.5 and 0.8 moderate, and above 0.8 large (Cohen, 1988).

*Is training effective in improving attitudes toward people with a diagnosis of personality disorder?*

Out of the 20 included studies, 19 reported improvements on at least one measure of attitude with effect sizes ranging from .04 to 4.45. Both RCTs found that attitudes were improved significantly for the intervention but not control groups post-intervention with large (Fraser, 2001) and small/moderate (Commons-Treloar, 2009) effect sizes, however, Fraser et al. (2001) used an unvalidated measure of attitudes and Commons-Treloar (2009) used a validated measure of attitudes towards self-harm with an additional prompt to consider people with a BPD diagnosis. Both RnCTs found that attitudes, as measured by the validated APDQ, HAQ and SDS were improved in both groups post-intervention with small/moderate (Clarke, Taylor, Bolderston, Lancaster, & Remington, 2015) and small (Clarke, Taylor, Lancaster, & Remington, 2015) effect sizes. Two of the nRCTs found significant improvements in attitudes for the intervention but not control groups post-intervention (Bruce et al., 2016; Miller & Davenport, 1996), however, effect sizes could not be calculated. The third nRCT found no improvement in attitudes for either the intervention or control group, however, this study had a very small sample size and was also aimed at improving clinical outcomes (Stringer et al., 2015).

Of the remaining 13 studies that used uncontrolled repeated measures, two studies showed large effect sizes for improved attitudes towards people with a diagnosis of personality disorder following training, however, both used an unvalidated measure of attitudes (Davies et al., 2014; Lamph et al., 2014). One study showed a moderate effect size for attitude towards personality disorder generally using the ADPQ (Polnay, MacLean, Lewington, & Patrick, 2015), and one showed a moderate effect size for attitudes towards BPD following training using a validated measure adapted for BPD

(Knaak, Szeto, Fitch, Modgill, & Patten, 2015). The remaining studies all showed significant improvements with small effect sizes post-intervention (Clark et al., 2015; Commons-Treloar & Lewis, 2008; Keuroghlian et al., 2016; Krawitz, 2004; Maltman & Hamilton, 2011; Shanks et al., 2011; Welstead et al., in press), or significant improvements with unknown effect sizes (Ebrahim et al., 2016; Woodward et al., 2009). Non-significant findings were shown for empathic concern in one study which targeted attitudes towards BPD in a forensic setting (Clark et al., 2015), and the majority of items in one study that targeted attitudes towards BPD, however, the authors cited probable ceiling effects and the study had a very small sample size (Woodward et al., 2009).

*Are improvements maintained over time?*

Six studies had a follow-up period of less than 6-months. Of these six, four found that improvements in attitudes were maintained (Clark et al., 2015; Fraser, 2001; Maltman & Hamilton, 2011; Miller & Davenport, 1996), however, in both Davies et al. (2014) and Lamph et al (2014) the improvement for the PD-KASQ-C was not maintained at 3-months. Improvements were maintained for the PD-KASQ-U and PD-KASQ-ER in Davies et al. (2014), however, in Lamph et al. (2014), improvements were maintained for the PD-KSAQ-U but had significantly reduced to below pre-training levels for the PD-KSAQ-ER. Seven studies had a follow-up period of 6-months or more. Of these seven, four found that improvements in attitudes were maintained (Bruce et al., 2016; Clarke et al, 2015a; Clarke et al., 2015b; Krawitz, 2004). Like previous studies using the PD-KASQ, Ebrahim et al. (2016) found that improvements were maintained for the PD-KSAQ-U and PD-KASQ-ER at 6-months, but not for the PD-KASQ-C. In Commons-Treloar (2009), improvement was maintained at 6-months for psychoanalytically orientated training but not for CBT-based training. No initial improvement was found in Stringer et al. (2015).

*Does including a psychological model, skills component, or PPE improve effectiveness?*

Only two studies were identified that were not underpinned by a psychological model that was shared with participants. Keuroghlian et al. (2016) targeted BPD and taught Good Practice Management (GPM) to multi-disciplinary mental health professionals and found significant improvements with small effect sizes for eight out of nine questionnaire items, however, this study used an unvalidated measure of attitudes. Stringer et al. (2015) also targeted BPD and taught Collaborative Care to mental health nurses and found no significant improvements in attitudes towards self-harm or therapeutic alliance, however,

this study was also aimed at improving clinical outcomes and the sample size was small. All 18 studies reporting the use of a psychological model reported an improvement in attitude apart from the second group of participants in Woodward et al (2009), and Clark et al. (2015) who failed to find an improvement in empathic concern after delivering training focused on the biological component of the biopsychosocial model.

Seven studies included a clinical skills component. Of these seven, six led to improved attitudes with effect sizes ranging from small (Krawitz, 2004), to small/moderate (Clarke et al., 2015a), to moderate (Knaak et al., 2015), to large (Fraser, 2001), and unknown (Bruce et al., 2016; Woodward et al., 2009). Improved attitudes were not found in Stringer et al (2015) or for most items in the second group of participants in Woodward et al. (2009). Five studies include a self-management skills component. Of these five, all led to improved attitudes with effect sizes ranging from small (Clarke et al., 2015b; Welstead et al., in press), to small/moderate (Clarke et al., 2015a), to moderate (Polnay et al., 2015) to unknown (Woodward et al., 2009). Again, improved attitudes were not found for most items in Woodward et al. (2009). Eight studies were known to not include a skills component at all. Of these eight, all led to improved attitudes with effect sizes ranging from small (Clark et al., 2015; Clarke et al., 2015b; Commons-Treloar, 2009; Commons-Treloar & Lewis, 2008; Keuroghlian et al., 2016; Maltman & Hamilton, 2011; Shanks et al., 2011) to moderate (Miller & Davenport, 1996; Shanks et al., 2011; Commons-Treloar, 2009).

Four studies evaluated an intervention that was co-delivered by PPE. Of these four, all showed significant improvements in attitude with large (Davies et al., 2014; Lamph et al., 2014), moderate (Knaak et al., 2015), or unknown (Ebrahim et al., 2016) effect sizes. Six studies included videos of PPE. Of these six, all showed significant improvements in attitudes with small (Clarke et al., 2015b; Keuroghlian et al., 2016; Krawitz, 2004; Shanks et al., 2011), to moderate (Polnay et al., 2015), to large (Fraser, 2001) effect sizes.

*Does the length of training influence effectiveness?*

Ten interventions were delivered within 1-day (≤ 6 hours). Of these ten, all led to some improvement in attitudes, the majority of which demonstrated small effect sizes except for Knaak et al. (2015) and Polnay et al. (2015) who demonstrated moderate effect sizes, and Fraser et al. (2001) who demonstrated a large effect size. Nine interventions were delivered over 2-days or more. Of these nine, eight led to some improvement in attitudes, with the exception of Stringer et al. (2015), the majority of which demonstrated small effect sizes except for Davies et al. (2014) and Lamph et al. (2014) who demonstrated large effect sizes.

*Is the effectiveness of training influenced by gender, professional role, length of experience, prior training, or pre-training attitudes?*

Two studies explored if gender had an influence on outcome. Of these two, Knaak et al. (2015) found no interaction whereas Common-Treloar & Lewis (2008) found that only females improved significantly. Four studies explored if professional role had an influence on outcome. Of these four, three found no effect (Clark et al., 2015; Krawitz, 2004; Miller & Davenport, 1996) and one found that nurses' attitudes improved more than doctors and psychologists, however, also cite more positive baseline attitude scores for doctors and psychologists (Welstead et al., in press). Four studies explored if length of clinical experience influenced outcome. Of these five, three found no effect (Clark et al., 2015; Knaak et al., 2015; Miller & Davenport, 1996), one found that attitudes did not improve for participants with more than or equal to 16 years clinical experience (Commons-Treloar & Lewis, 2008), and one found that fewer years clinical experience was related to greater improvement in feeling competent and empathic (Keuroghlian et al., 2016). Three studies explored if prior training influenced outcome. Of these three, two found no effect (Miller & Davenport, 1996; Commons-Treloar & Lewis, 2008) and one found that participants who had not attended previous BPD training improved more in their perspective taking (Clark et al., 2015). No studies explored the influence of baseline attitude scores on outcome.

**Secondary outcomes.**

Three studies measured staff wellbeing. Clarke at al. (2015b) found no significant differences in burnout or psychological distress between or within groups, however, Clarke et al. (2015a) found an increased burnout score post-intervention for the ACT group but not the DBT group with a moderate effect size, though this was not maintained at 6-months. Bruce et al. (2017) also found no significant differences in overall burnout

score but found an improvement on the 'reduced personal accomplishment' subscale for the intervention group only at 12-month follow-up. Six studies measured knowledge. Of these four, two found that knowledge of mentalisation techniques was improved post-intervention with large effect sizes (Polnay et al., 2015; Welstead et al., in press), one found that knowledge of the 'biological underpinnings' of BPD was improved post-intervention and maintained at 2-month follow-up with a small effect size (Clark et al., 2015), one found that knowledge of BPD was improved 1-month post-intervention for the intervention group only with a large effect size (Miller & Davenport, 1996), and two found significant improvements in knowledge with small (Krawitz, 2004) or unknown (Woodward et al., 2009) effect sizes. Clarke et al. (2015a) measured psychological flexibility and found that that this was reduced post-intervention for ACT group only with a moderate effect size, however, this was not maintained at 6-month follow-up, and Clarke et al. (2015b) measured consistency between actions and values and found an improvement post-intervention for both the ACT and psychoeducation groups, neither of which were maintained at 6-month follow-up. Krawitz (2004) did not report the results from the Impact on Practice Likert scale.

**Discussion**

This systematic review aimed to investigate the effectiveness of training aimed at improving health and social care professionals' attitudes towards people with a diagnosis of personality disorder. The evidence suggests that training can be effective, however, effect sizes tended to be small overall. The evidence also suggests that training is less effective when improving attitudes is not the only focus (Stringer et al., 2015; Welstead et al., in press; Woodward et al., 2009). Many studies were judged low-quality and used unvalidated measures, however moderate effect sizes towards both personality disorder and BPD were found in studies judged high-quality. The evidence also suggests that improvements in attitudes tend to be maintained over time, however, there is some evidence to suggest that feelings of capability may be more difficult to sustain than feelings of empathy long-term (Davies et al., 2014; Ebrahim et al., 2016), and that feelings of empathy may be more difficult to maintain in a multi-agency setting (Lamph et al., 2014), and when training does not address trauma (Commons-Treloar, 2009). Most studies included a psychological model and the evidence does not suggest that any are more effective, however, there is some evidence to suggest that training that does not include a psychological model (Stringer et al., 2015), or includes a reductionist, biologically based, model (Clark et al., 2015) is less effective. There was a slight trend that interventions that included a clinical skills component, such as teaching DBT skills to use with clients, were more effective than interventions that included a self-management skills

component. such as mindfulness, and interventions that included no skills component. In terms of PPE, all studies that were co-delivered demonstrated moderate to large effect sizes where available, and effect sizes for interventions that were not co-delivered tended to be smaller with some exceptions. There was no evidence to suggest that the length of training had any influence on effectiveness.

These findings support the Social Cognitive Model (Corrigan, 2000) in a number of ways. Firstly, the finding that training that includes a psychological model for understanding personality disorder may be more effective supports the idea that modifying unhelpful attributions of controllability can improve empathy. Secondly, the finding that teaching clinical skills may enhance effectiveness supports the idea that modifying unhelpful attributions of stability can improve optimism. Thirdly, the finding that co-delivery by PPE tended to result in large effect sizes supports both ideas because exposure to people who have been diagnosed with a personality disorder and overcome their difficulties to an extent may increase professionals' optimism that people can change, and hearing personal stories may help counter unhelpful assumptions about controllability. This review has extended the previous review by Dickens et al. (2016) by including an additional 13 studies and finding evidence that training can be effective in improving professionals' attitudes towards people with a diagnosis of personality disorder in general, as well as just towards people with a diagnosis of BPD. This review has also found evidence that training can be effective in improving attitudes across disciplines within health and social care, as opposed to just being focused on nursing staff. The larger evidence base in this review has also provided sufficient information to determine that improvements in attitudes do tend to be maintained over time. In line with previous research exploring the effectiveness of anti-stigma interventions towards mental health diagnostic labels in the general population (Corrigan & Fong, 2014), this review has found evidence suggesting that effect sizes are larger for training that includes an element of contact with people who have had a diagnosis of personality disorder than training that is delivered by professionals only.

Table 4

*Study Outcomes*

| Study | Primary measure(s) of attitudes | ES | Loss to f-up (%); analysis |
|---|---|---|---|
| Bruce et al. (2017) | ↑**PD-KASQ**:** sig. main effect of time (F=71.33, p<.01); *Intervention group* - sig. difference pre to post (p<.01), pre to 6m f-up (p<0.001), & pre to 12m f-up (p<.01) (pre = 73.34, post = 84.63, 6m = 81.73, 12m = 87.60) [No SDs] NON SIG: PD-KASQ: C*ontrol group* - no sig. difference pre to post (pre = 73.43, post = 71.5) | UKN | *I* - NR; C - 100% |
| Clark, Fox & Long (2014) | ↑**MHLO*:** sig. difference pre to post (p<.017, d =.32) & pre to f-up (p<.017, d =.25) (pre = 68(6.75), post = 72.5(7.5), f-up = 73(11)) ↑**IRI Perspective Taking*:** sig. difference post to f-up (p<.017, d =.31) (post = 20(6), f-up = 21(4)) NON SIG: IRI-Empathic Concern: no sig. difference pre to post or pre to f-up (pre = 21.5(6), post = 19.5(5), f-up = 20(4); Perspective Taking: no sig. difference pre to post (pre = 21(6), post = 20(6)) | S | NR |
| Clarke et al. (2015a) | ↑**APDQ***: s**ig. main effect of time (F(2,63.76)=8.79, p<.001); *ACT group* - sig. difference pre to post (p<.001, d =.25) & pre to f-up (p<.002, d =.22) (pre = 137.9(17.09), post = 142.23(16.93), f-up = 142.05(20.52)); *DBT group* - sig. difference pre to post (p<.001, d = .43) & pre to f-up (p<.002, d = .26) (pre = 143.49(18.74), post = 151.17(16.93), f-up = 147.96(15.31)) ↑**HAQ***:** sig. main effect of time (F(2,64.47)=11.20, p<.001); *ACT group* - sig. difference pre to post (p<.001, d=.19) & pre to f-up (p=0.005, d =.30) (pre = 80.01(9.32), post = 81.68(8.38), f-up = 82.45(9.47)); *DBT group* - sig. difference pre to post (p<.001, d = .51) & pre to f-up (p=.005, d=.36) (pre = 78.92(8.06), post = 82.67(6.47), f-up = 81.78(7.83)) ↓**SDS***:** sig. main effect of time (F(2,65.45)=12.10, p<.001); *ACT group* - sig. difference pre to post (p<.001, d =.51) & pre to f-up for (p=.001, d=.29) (pre = 12.02(3.62), post = 10.25(3.30), f-up = 10.97(3.66)); *DBT group* - significant different pre to post (p<.001, d=.22) & pre to f-up (p=.001, d=.55) (pre = 12.00(4.07), post = 11.09(4.05), f-up = 9.65(4.43)) NON SIG: APDQ, HAQ, SDS: no sig. Group x Time interactions | S/M | *ACT* - 37.74%; *DBT* - 48.93%; ITT |
| Clarke et al. (2015b) | ↑**APDQ**:** sig. main effect of time (F(2,76.44)=7.68, p=.001); *ACT group* - sig. difference pre to post (p=.001, d =.22) & pre to f-up (p=.004, d=.32) (pre = 143.09(21.17), post = 148.00(23.66), f-up = 150.34(23.43)); *PET group* - sig. difference pre to post (p=.001, d =.30) & pre to f-up (p=.004, d =.46) (pre = 144.64(19.84), post = 150.44(21.57), f-up = 153.33(17.64)) ↑**HAQ**** sig. main effect of time (F(2, 65.37=5.59, p=.006); *ACT group* - sig. difference pre to post (p=.011, d =.21) & pre to f-up (p=.003, d =.28) (pre = 80.64(11.17), post = 83.10(11.72), f-up 83.72(10.83)); *PET group* - sig. difference pre to post (p=.011, d =.26) & pre to f-up (p=.003, d =.47) (pre = 79.41(11.90), post = 82.34(10.96), f-up = 84.16(7.67)) ↑**SDS*** sig. main effect of time (F(2,76.08)=3.75, p=.028); *ACT group* - sig. difference pre to post (p=.039, d=.26) & pre to f-up (p=.019, d =.26) (pre = 11.46(3.73), post = 10.47(3.86), f-up = 10.39(4.42)); *PET group* - sig. different pre to post (p=.039, d=.04) & pre to f-up (p=.019, d=.36) (pre = 11.16(3.64), post = 11.00(4.20), f-up = 9.68(5.06)) NON SIG: APDQ, HAQ, SDS: no sig. Group x Time interactions | S | *ACT* - 53%; *PET* - 22%; ITT |
| Commons Treloar & Lewis (2008) | ↑**ADSHQ*****: sig. difference pre to post for whole sample (p<.001, d=.40); sig. difference pre to post for emergency medicine (n=33) (p=.002, d =.43) (pre = 88.33 (6.80), post = 91.42 (7.40), & pre to post for mental health (n=66) (p=.000, d =.42) (pre = 93.99(5.55), post = 96.47(6.17) | S | N/A |
| Commons Treloar (2009) | ↑**ADSHQ****: *PA group* - sig. difference pre to post (p<.01, d=.53) & pre to f-up (p<.05, d=.26) (pre = 92.34(5.98), post = 95.52 (5.93), f-up = 94.54(6.26)); *CBT group* - sig. difference pre to post (p=.02, d=.43) (pre = 94.68(5.38), post = 97.58(7.70)) NON SIG: *CBT group* - no sig. difference pre to f-up (pre = 94.68(5.38), f-up = 95.72(7.70)); *Control group* - no sig difference pre to f-up (pre = 92.23(7.34), f-up = 92.45(5.45)) | S/M | PA - 49%; CBT - 74%; C - 55%; No ITT |

Table 4

*Study Outcomes continued*

| Study | Primary measure(s) of attitudes | ES | Loss to f-up (%); analysis |
|---|---|---|---|
| Davies et al. (2015) | ↑**PD-KASQ-U***:** sig. difference pre to post (p<.001, d =.1.80) (pre = 18.09(3.38), post = 23.28(2.30)), & pre to 3 m f-up (p<.001, d = 1.57) (pre = 18.10(3.16), f-up = 22.80(2.83)) ↑**PD-KASQ-ER**:** sig. difference pre to post (p<.001, d =.87) (pre = 20.49(3.42), post = 23.10(2.53)) & pre to 3m f-up (p<.01, d=.83) (pre = 20.47(2.77), f-up = 22.60(2.35)) ↑**PD-KASQ -C***:** sig. difference pre to post (p<.001, d = .73) (pre = 18.09(2.71), post = 19.98(2.46)) NON SIG: PD-KASQ-C: No sig. difference pre to 3 m f-up (pre = 18.53(3.07), f-up = 19.91(3.31)) | L | 91%; No ITT |
| Ebrahim et al. (2016) | ↑**PD-KASQ total**:** sig. difference pre to post (p<.001), pre to 3m f-up (p<.001), & pre to 6m f-up (p<.003) (pre = 64.8, post = 80.6, 3m f-up = 77.4, 6m f-up = 77.9) ↑**PD-KASQ-U***:** sig. difference pre to post (p<.001), pre to 3m f-up (p<.001), & pre to 6m f-up (p<.001) (pre = 22.6, post = 28.88, 3m f-up = 28.88, 6m f-up = 27.8) ↑**PD-KASQ-ER***:** sig. difference pre to post (p<.001), pre to 3m f-up (p<.001), & pre to 6m f-up (p<.001) (pre = 14.7, post = 18.9, 3m f-up = 16.9, 6m f-up = 16.7) ↑**PD-KASQ-C****: sig. difference pre to post (p<.003) & pre to 3m f-up (p<.003) (pre = 18.7, post = 21.7, 3m f-up = 21.5) [No SDs] NON SIG: PD-KASQ-C: no sig. difference pre to 6m f-up (pre = 18.7, 6m f-up = 21.0) [No SDs] | UKN | 66% at 3m; 73% at 6m; No ITT |
| Fraser (2001) | ↑**RAAQ***:** sig. main effect of group (F=132.49, d=.70); sig. main effect of time (F=476.64, d=.89); sig. Group x Time interaction (F=486.73, d=.89); *Intervention group* - sig. difference pre to post (p<.001, d = 4.45) & pre to f-up (p<.001, d = 4.43) (pre = 45.07(3.45), post = 57.90(2.17), f-up = 58.00(2.26)) NON SIG: *Control group* - no sig. difference pre to post & pre to f-up (pre = 46.17(2.80), post = 46.17(2.80), f-up = 46.03(2.82)) | L | 0% |
| Keuroghlian et al. (2016) | ↓**'If I had a choice, I would prefer to avoid caring for a BPD patient'***:** sig. difference pre to post (p<.001, d =.39) (pre = 3.87(1.84), post = 3.23(1.73)); ↑**'I feel professionally competent to care for BPD patients'***:** sig. difference pre to post (p<.001, d = .41) (pre = 4.27(1.50), post = 4.86(1.40)); ↓**'I dislike BPD patients'**: sig. difference pre to post** (p=.005, d = .27) (pre = 2.92(1.62), post = 2.51(1.46)); ↑**'I believe the BPD patient has low self-esteem'**:** sig, difference pre to post (p=.022, d =.19) (pre = 5.59(1.50), post = 5.87(1.47)); ↑**'I feel I can make a positive difference in the lives of BPD patients'***:** sig difference pre to post (p=<.001, d =.37) (pre = 4.94(1.47), post = 5.46(1.32)); ↓**'The prognosis for BPD treatment is hopeless'***:** sig, difference pre to post (p=<.001, d =.47) (pre = 2.33(1.38), post = 1.74(1.14)); ↑**'Some psychotherapies are very effective in helping patients with BPD'*****: sig. difference pre to post (p=<.001, d =.32) (pre = 5.66(1.35), post = 6.08(1.31)); ↓**'I would like more training in the management to treatment of BPD patients'*****: sig. difference pre to post (p<.001, d=.36) (pre = 6.15(1.25), post - 5.65(1.51)) NON SIG: 'BPD is an illness that causes symptoms that are distressing to the BPD individual': no sig. difference pre to post (p=0.08) (pre = 6.36(1.16), post = 6.56(1.02)) | S | N/A |
| Knaak et al. (2015) | **OMS-HS(BPD)/OMS-HS(original)***:** sig. main effect of time (F=72.46, p<.001, r=.53) (pre = 33.96(4.48), post = 31.05(6.36)), sig. survey type x time interaction (F=28.71, p<.001); *OMS-HC(BPD)* - sig. difference pre to post (p<.001, d =.73) (pre = 37.56(6.50), post = 32.83(6.40)); *OMS-HC (original)* - sig. difference pre to post (p = .03, d =.17) (pre = 30.35(6.30), post = 29.28(6.20)) | M | N/A |

Table 4

*Study Outcomes continued*

| Study | Primary measure(s) of attitudes | ES | Loss to f-up (%); analysis |
|---|---|---|---|
| Krawitz (2004) | ↑**Willingness**:** sig. difference pre to post (p<0.01, d =.31) & pre to f-up (p<0.01, d =.13) (pre = 3.88(0.70), post = 4.09(0.65), f-up = 3.97(0.68)) ↑**Optimism****: sig. difference pre to post (p<0.01, d =.50) & pre to f-up (p<0.01, d =.15) (pre = 3.68(0.57), post = 3.98(0.63), f-up = 3.77(0.63)) ↑**Enthusiasm**:** sig. difference pre to post (p<0.01, d =.43) & pre to f-up (p<0.01, d =.14) (pre = 3.67(0.64), post = 3.95(0.65), f-up = 3.76(0.66)) ↑**Confidence****: sig. difference pre to post (p<0.01, d =.41) & pre to f-up (p<0.01, d =.24) (pre = 3.57(0.58), post = 3.81(0.58), f-up = 3.72(0.60)) ↑**Clinical Skills**:** sig. difference pre to post (p<0.01, d =.23) & pre to f-up (p<0.01, d =.24) (pre = 3.54(0.59), post = 3.67(0.56), f-up = 3.68(0.58)) | S | 38%; No ITT |
| Lamph et al. (2014) | ↑**PD-KASQ-U*:** sig. difference pre to post (p =.017, d = 3.58) & pre to f-up (p =.017, d = 2.06) (pre = 2.59(0.41), post = 3.94(0.34), f-up = 3.30(0.27)); ↓**'PD-KASQ-U*:** sig. difference post to f-up (p=.017, d = 2.08); ↑**PD-KASQ-ER***: sig. difference pre to post (p=.017, d = 1.06) (pre = 3.61(0.46), post = 4.08(0.43)) ↓**PD-KASQ-ER*:** sig. difference pre to f-up (p =.017, d = 1.50) & post to f-up (p =.017, d = 2.83) (f-up = 3.03(0.30)); ↑**PD-KASQ-C*:** sig. difference pre to post (p=.017, d = 1.24) (pre = 3.27(0.38), post = 3.68(0.27)); ↓**PD-KASQ-C*:** sig. difference post to f-up (p=.017, d = 1.07) (f-up = 3.39(0.27)) NON SIG: PD-KASQ-C: no sig. difference pre to f-up | L | 80%; No ITT |
| Maltman & Hamilton (2011) | ↑**APDQ 'security/vulnerability subscale'*:** sig. difference pre to f-up (p=.019, d=.20) (pre = 48.54(6.27), post = 51.00(6.90)) NON SIG: APDQ total: no sig. difference pre to f-up (pre = 135.46(17.37), f-up = 140.99(19.47)); APDQ 'enjoyment/loathing', 'acceptance/rejection', 'purpose/futility',& 'enthusiasm/exhaustion' subscales: no sig. differences pre to f-up; 'enjoyment/loathing' (pre = 40.46(10.17), f-up = 42.22(11.82)); 'acceptance/rejection' (pre = 25.65(3.08), f-up = 26.31(3.22)); 'purpose/futility' (pre = 12.96(4.32), f-up = 13.27(2.66)); 'enthusiasm/exhaustion' (pre = 7.85(1.71), f-up = 8.19(1.33)) | S | 59%; No ITT |
| Miller & Davenport (1996) | ↑**BPDQ-A**:** sig. main effect of group (F=7.8, p<.01); *Intervention group* - sig. difference pre to f-up (p<.01, d = .56) (pre = 17.8(3.7), f-up = 19.7(3.1)) NON SIG: *Control group* - no sig. difference pre to f-up (pre = 16.8(4.1), f-up = 15.4(5.7)) | M | NR |
| Polnay et al. (2015) | ↑**APDQ*:** sig. difference pre to post (95% confidence interval = 0.01 to 1.44, d=.72) (pre = 124.5(14.3), post = 135.3(14.9)) | M | N/A |
| Shanks et al. (2011) | ↓**'If I had a choice, I would prefer to avoid caring for a BPD patient'***:** sig. difference pre to post (p<.000, d =.35) (pre = 3.92(1.58), post = 4.45(1.47)); ↑**'I feel professionally competent to care for BPD patients'***:** sig. difference pre to post (p<.000, d =.36) (p = 4.05(1.43), post = 3.55(1.32)); ↓**'I dislike BPD patients'***:** sig. difference pre to post (p<.000, d =.23) (p = 4.78(1.57), post = 5.12(1.36)); ↑**'I feel I can make a positive difference in the lives of BPD patients'***:** sig. difference pre to post (p=.004, d =.18) (pre = 3.30(1.19), post = 3.09(1.18)); ↓**'The prognosis for BPD treatment is hopeless'***:** sig. difference pre to post (p<.000, d =.42) (pre = 5.30(1.25), post = 5.80(1.15)); ↑**'I would like more training in the management to treatment of BPD patients'***:** sig. difference pre to post (p<.000, d=.57) (pre = 1.71(1.06), post = 2.42(1.42)); ↑**'BPD is an illness that causes symptoms that are distressing to the BPD individual'***:** sig. difference pre to post (p=.000, d =.26) (pre = 2.61(1.43), post = 2.25(1.29)) NON SIG: 'I believe the BPD patient has low self-esteem', 'Some psychotherapies are very effective in helping patients with BPD': no sig. differences pre to post | S | N/A |

Table 4

*Study Outcomes continued*

| Study | Primary measure(s) of attitudes | ES | Loss to f-up (%); analysis |
|---|---|---|---|
| Stringer et al. (2015) | NON SIG: 'STAR-C: *Intervention group* - no sig. difference pre to 5m & pre to 9m f-up (pre = 35.8(3.1), 5m f-up = 34.9(3.3), 9m f-up = 37.7(4.7)); *Control group* - no sig. difference pre to 5m f-up & pre to 9m f-up (pre = 36.8(4.1), 5m f-up = 37.3(4.4), 9m f-up = 37.1(4.3)); SBAQ: *Intervention group* - no sig. difference pre to 5m & pre to 9m f-up (pre = 41.8(5.0), 5m f-up = 40.6(5.1), 9m f-up = 40.7(6.5)); *Control group* - no sig. difference pre to 5m & pre to 9m f-up (pre = 42.8(7.4), 5m f-up = 40.8(3.1), 9m f-up = 43.0 (6.8)); ADSHQ: *Intervention group* - no sig. difference pre to 5m & pre to 9m f-up (pre = 91.5(7.2), 5m f-up = 100.5(7.6), 9m f-up = 97.0(6.1)); *Control group* - no sig. difference pre to 5m & pre to 9m f-up (pre = 96.7(5.4), 5m f-up = 95.6(4.5), 9m -up = 101.7(6.2)) | NA | 0% |
| Welstead et al. (2017) | ↑**APDQ*:** sig. difference pre to post (95% confidence interval = 1.8 to 6.2, d =.20) (pre = 148.7(12.3), post = 152.7(no SD)) | S | N/A |
| Woodward, Jones & Martin (2009) | *Group 2* - ↑**'I feel understanding towards PD clients'*:** (p =0.042) (pre = 3.5, post = 4.33) [No SDs] NON SIG: *Group 1* - 'I feel confident that I can make a positive impact' (pre = 3.22, post = 3.50); 'I feel that clients with this diagnosis often engage in self-harming behaviour as a way of manipulating others': (pre = 2.89, post = 2.50) [No SDs] *Group 2*: 'I feel able to help PD clients' (pre = 2.83, post = 3.50); 'I feel pessimistic about PD clients' (pre = 2.50, post = 2.67); 'I feel frustrated with PD clients' (pre = 3.00, post = 2.50); 'I often feel overwhelmed by the problems that clients with personality disorder have' (pre = 3.5, post = 2.83); 'I often feel that there must be something more that I can do to help clients with a personality disorder' (pre = 3.50, post = 3.17); 'this organisation provides important support to care for people with personality disorder (pre = 4.0, post = 4.5); 'our staff are well trained to respond to the special needs of people with personality disorder (pre = 3.67, post = 4.0); 'I feel able to apply psychological models in my work' (pre = 3.83, post = 4.0) [No SDs] | UKN | N/A |

| Study | Secondary measure(s) of attitudes | ES | Loss to f-up (%); analysis |
|---|---|---|---|
| Bruce et al. (2017) | ↑**MBI 'reduced personal accomplishment' subscale***: *Intervention group* - sig. difference pre to 12m f-up (p=.02) (pre = 32.80, 12m = 39.67). NON SIG: MBI total: no sig. main effect of time; *Intervention group* - no sig difference pre to post or pre to 6m f-up; *Control group* - MBI 'reduced personal accomplishment' subscale': no sig. differences; *Intervention & Control Group* - MBI 'emotional exhaustion' & 'depersonalisation' subscales: no sig. differences [No SDs] | UKN | I - NR; C - 100% |
| Clark, Fox & Long (2014) | ↑**Knowledge*:** sig. difference pre to post (p<.017, d =.48) & pre to f-up (p<.017, d =.46) (pre = 5(2), post = 8(2), f-up = 9(3)) NON SIG: No sig. difference post to f-up (post = 8(2), f-up = 9(3)) | S | NR |
| Clarke et al. (2015a) | ↑**MBI*:** sig. main effect of time (p =.012); sig. Group x Time interaction (p<.001); *ACT group* - sig. difference pre to post (p<.001, d =.54) (pre = 19.74(10.89), post = 26.20(12.91), f-up = 20.94(14.35)) ↓**AAQ****: sig. main effect of time (p =.003); sig. Group x Time interaction (p =.002); *ACT group* - sig. difference pre to post (p <.001, d =.50) (pre = 38.44(5.70), post = 35.34(6.68), f-up = 37.85(6.76)). NON SIG: MBI: *DBT group* - (pre = 21.91, post = 20.46, f-up = 24.00); AAQ: *DBT group* - (pre = 39.40, post = 39.04, f-up = 38.95); GHQ: no sig. main effect of time or Group x Time interactions: *ACT group* - (pre = 17.51, post = 17.30, f-up = 21.27), *DBT group* - (pre = 18.28, post = 16.82, f-up = 17.04) | ACT = M; DBT = N/A | ACT - 37.74%; DBT - 48.93%; ITT |

Table 4

*Study Outcomes continued*

| Study | Secondary measure(s) of attitudes | ES | Loss to f-up (%); analysis |
|---|---|---|---|
| Clarke et al. (2015b) | ↑**VLQ*** sig. main effect of time (p =.04); *ACT group:* sig. difference pre to post (p =.01, d =.48) (pre = 1.99(1.77), post = 1.23(1.35), f-up = 1.68(1.44)); *PET group* - sig. difference pre to post (p = .01, d =.05) (pre = 2.14(1.89), post = 2.05(1.49), f-up = 2.25(1.45)) NON SIG: GHQ; MBI (no main effect of time or Group x Time interactions); VLQ (no sig. difference pre to f-up) | ACT = S; PET = N/A | ACT - 53%; PET - 22%; ITT |
| Krawitz (2004) | ↑**Theoretical Knowledge**:** sig. difference pre to post (p<.01, d =.44) & pre to f-up (p<.01, d =.29) (pre = 3.56(0.58), post = 3.81(0.56), f-up = 3.80(1.0)) | S | 38%; No ITT |
| Miller & Davenport (1996) | ↑**BPDQ-K'**:** sig. main effect of group (p <.01, d = 1.27); *Intervention group* - sig, difference pre to f-up (pre = 54.5(8.5), f-up = 64.1(6.5)) NON SIG: *Control group* - pre to f-up (pre = 53.3(8.9), f-up= 53.4(8.4)) | L | NR |
| Polnay et al. (2015) | ↑**KAMQ*:** sig. difference pre to post (95% confidence interval = 0.98 to 2.67, d = 1.86) (pre = 97.1(7.7), post = 112.5(8.8)) | L | N/A |
| Welstead et al. (2017) | ↑**KAMQ*:** sig. difference pre to post (95% confidence interval = 10.0 to 13.3, d = 1.2) (pre = 74.7, post = 86.3) | L | N/A |
| Woodward, Jones & Martin (2009) | *Group 1* - ↑**'I feel that I have a good knowledge of the diagnosis of personality disorder'***:** sig. difference pre to post (p =.000) (pre = 2.28, post = 3.94) ↓**'I feel that I do not have enough knowledge'***:** sig. difference pre to post (p =.000) (pre = 4.11, post = 2.28) ↑**'I feel that I have a good understanding of how clients may develop a personality disorder'***:** sig. difference pre to post (p =.000) (pre = 2.33, post = 3.83) ↑**'I feel I have a good understanding of why clients harm themselves'***:** sig. difference pre to post (p =.000) (pre = 2.89, post = 4.17) ↓**'I feel that I do not have the necessary skills'***:** sig. difference pre to post (p =.002) (pre = 3.22, post = 2.36) [No SDs] NON SIG: Group 2 - 'I have a good understanding of psychological models of personality disorder' (pre = 2.33, post = 3.5) | UKN | N/A |

*Primary measures:* PD-KASQ = Personality Disorder Knowledge & Skills Questionnaire; MHLO - Mental Health Locus of Origin scale; IRI = Interpersonal Reactivity Index; APDQ = Attitudes towards Personality Disorder Questionnaire; HAQ = Helping Alliance Questionnaire; SDS = Social Distancing Scale; ADHSQ = Attitude towards Deliberate Self Harm Questionnaire; PD-KASQ-U = Understanding subscale; PD-KASQ-ER = Emotional Reaction subscale; PD-KASQ-C = Capabilities subscale, RAAQ = Revised Assessment of Attitudes Questionnaire; OMS-HC-BPD = Opening Minds Scale for Health Professionals -revised for Borderline Personality Disorder; OMS-HC-Original = Opening Minds Scale for Health Professionals - original version; BPDQ-A = Borderline Personality Disorder Questionnaire - Attitude subscale; STAR-C = Scale to Assess Therapeutic Relationships in Community Mental Health Care - Clinician version; SBAQ = Suicide Behaviour Attitude Questionnaire *Secondary measures:* MBI = Maslach's Burnout Inventory; AAQ = Acceptance and Action Questionnaire; GHQ = General Health Questionnaire; VLQ = Valued Living Questionnaire; BPDQ-K = Borderline Personality Disorder Questionnaire - Knowledge subscale; KAMQ = Knowledge and Application of MBT Questionnaire (MBT = Mentalisation Based Therapy)

N.B: sig. = significant; m = months; f-up = follow up; SD = Standard Deviation; * = p<.05; ** = p<.01; *** = p<.001; ES = Effect Size; S = Small (d ≥ 0.2); M = Moderate (d ≥ 0.5; L = Large (d ≥ 0.8); I = Intervention; C = Control; NR = Not Reported

**Strengths and limitations.**

The review followed the PRISMA guidelines (Moher et al., 2009) and meets all necessary criteria for a systematic review. There was also good inter-rater agreement for the abstract and full-text reading stage. It was not possible for the data extraction or quality assessment to be checked by a second rater, which is a limitation. There were also some pieces of information that could not be gathered because authors could be not contacted, which means that some data is incomplete. This review also included all measures from each study, which could be considered a weakness. Some studies included multiple measures of attitudes, some of which not specific to personality disorder or BPD, which raises the chance that significant effects will have been found. It is possible that this review could have been made of higher quality by removing some of these additional measures from the analysis. It is also possible that the review would have been improved by removing some of the lower quality studies all together, for example, those that did not use validated outcome measures. The decision to include all the available information was made in both cases because it was felt necessary to create a broad overview of how research is currently being conducted in this area and make recommendations for improvements, however, it is also possible that tighter inclusion and exclusion criteria would have led to more robust findings.

**Clinical implications.**

The findings suggest that service providers wishing to improve health and social care professionals' attitudes towards personality disorder should deliver training that is aimed exclusively at improving attitudes, and that including a psychological model, a clinical skills component, and PPE involvement is likely to improve effectiveness. Given the evidence that personality disorder diagnoses tend to overlap in practice, and the comparable effectiveness of training aimed at personality disorder broadly or BPD specifically, it seems sensible to suggest that training should be kept broad so that the benefits can be generalised to a larger client population. The findings also suggest that additional intervention may be required to maintained feelings of capability in healthcare settings, and feelings of empathy in multi-agency settings, perhaps in the form of clinical supervision. From the limited evidence available, it does not appear that training is an effective route to improving staff wellbeing, even when it is aimed at teaching self-management skills such as mindfulness, which again suggests that additional support such as that provided by supervision may be required alongside training. It is of note that only one study measured impact on practice and did not report any outcome (Krawitz, 2004). Therefore, although research suggests that attitudes and behaviour are linked

(Glassman & Albarracin, 2006), there is currently no evidence demonstrating that improved attitudes following training translate into improved clinical practice.

**Future directions.**

It is clear that more high-quality research is needed in this area. Future studies should consist of randomised controlled trials that use validated measures and include a follow-up period of a least 6-months. In particular, a randomised controlled trial comparing training that is co-delivered by PPE against training that is delivered by professionals only is needed to answer the question of whether co-delivery improves effectiveness over education delivered by professionals only. Many of the studies in this review used the NHS recommended PD-KASQ, and further studies should also seek to either validate the measure or use the APDQ as a valid and reliable alternative. Given the evidence that negative attitudes are associated with reduced staff wellbeing (Taylor, 2011), it is also important that further studies measure this, however, it will also be important for research to explore this relationship longitudinally. Providing care for people with a diagnosis can be personally challenging for professionals, however, it is also possible that reduced staff wellbeing, perhaps due to external or organisational pressures, may negatively impact attitudes. Future research should also investigate whether reported improvements in attitudes translate into improved clinical practice, perhaps via observational methods or service user report.

**Conclusion.**

The current evidence base suggests that training that is underpinned by a psychological model, teaches participants clinical skills, and involves PPE is most effective. This fits with the Social Cognitive Model (Corrigan, 2000), which proposes that challenging attributions of controllability and stability will reduce the likelihood that a label of personality disorder will trigger negative stereotypes that drive less empathic responses. More high-quality research is needed in this area to be able to make firm conclusions about whether these components are most effective, and should be in the form of RCTs that use valid and reliable outcome measure and follow-up participants for at least 6-months. It is also important that research begins to explore what additional support may help professionals maintain feelings of capability post-training and improve staff wellbeing, perhaps via qualitative methods.

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**Service Improvement Project - Non-Violent Resistance training for parents of adolescents misusing substances: a mixed-methodology service improvement evaluation**

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**Target Journal:** Journal of Family Therapy (Author Guidelines – Appendix E)

This paper is under review for publication in the Journal of Family Therapy. This journal was chosen because of its wide reach and focus on systemic practice. Articles related to Non-Violent Resistance have previously been published in this journal.

**Introduction**

Substance use disorders in adolescence are associated with poor educational attainment, crime and delinquency, risky sexual behaviour, school exclusion, and mental health problems (Chassin, 2008; Macleod et al., 2004). Latest statistics show that 18,349 young people under the age of 18 receive specialist treatment for substance misuse in the UK each year and whilst individual interventions are largely effective, many young people will either decline or drop out of treatment (Public Health England, 2015). Historically, substance use disorders have been viewed as individual problems requiring individual treatment, however, accumulating evidence supports the effectiveness of systemic approaches (Klostermann & O'Farrell, 2013) and commissioning guidance for young people's specialist substance misuse services outlines five key interventions including family interventions using psychosocial methods (NHS National Treatment Agency for Substance Misuse, 2008). A meta-analysis of psychosocial treatments for adolescent substance misuse found evidence of effectiveness for Multidimensional Family Therapy (MDFT) (Liddle & Rowe, 2002) and Functional Family Therapy (FFT) (Alexander & Parsons, 1982) (Waldron & Turner, 2008). However, both approaches require formal training and supervision, and the engagement of the young person which can limit access in many cases. Therefore, adolescent substance misuse is increasingly being viewed as a systemic problem, whilst current evidence based systemic interventions may not be suitable in all cases.

**The case for parenting interventions.**

Parenting styles can be characterised based on the concepts of *demandingness*, the extent to which parents control their child's behaviour, and *responsiveness*, the degree to which parents are sensitive to their children's emotional and developmental needs (Baumrind, 1967, 1991). An *authoritative* style is characterised by clear rules, high expectations, and high responsiveness, and is associated with healthy emotional and social development, whereas an *authoritarian* style is characterised by strict rules, high expectations, and low responsiveness, and is associated with low self-esteem, mental health problems, and increased risk of problem behaviour (Baumrind, 1991). *Permissive* styles, characterised by a lack of rules and expectations, with either high or low responsiveness, are also associated with poorer outcomes including problems with self-control, difficulties in relationships, and substance misuse. Several studies have also shown that authoritative, as opposed to authoritarian, parenting and increased parental involvement and monitoring can protect young people from substance misuse (Calafat, García, Juan, Becoña, & Fernández-Hermida, 2014; Fallu et al., 2010; McLaughlin, Campbell, & McColgan, 2016; Petrie, Bunn, & Byrne, 2007). Furthermore, a randomised

controlled trial which found Multi-Dimensional Family Therapy (MDFT) (Liddle & Rowe, 2002) to be superior to a peer group intervention for adolescents found that the change occurred through improved parenting practices (Henderson, Rowe, Dakof, Hawes, & Liddle, 2009). Taken together, this suggests that parent training may be a helpful intervention for adolescents misusing substances. Guidance for psychosocial interventions for substance misuses in over 16's only recommend information sessions and signposting for families (National Institute for Health and Care Excellence, 2007), however, parenting interventions are currently recommended as the first line treatment for antisocial behaviour and conduct disorder in guidance for child up to the age of 12 (National Institute for Health and Care Excellence, 2013) and there is evidence that parenting programmes can be equally effective with adolescents (Woolfenden, Williams, & Peat, 2001).

**Parenting interventions.**

Guidance recommends that parent training programmes should be based on social learning theory (National Institute for Health and Care Excellence, 2013). Parenting training programmes based on social learning theory typically address five key areas: promoting positive relationships, rewarding sociable behaviour, consistent rules and commands, consistent and calm consequences for unwanted behaviours such as ignoring the child or removing positive reinforcement, and reorganising the child's routine to avoid difficult situations (Scott & Gardner, 2015). The Incredible Years Programme (Webster-Stratton, 2001) and Triple P Positing Parenting Programme (Sanders, 1999) both have a strong evidence base and have been successfully implemented in the UK for younger children with significant improvements reported in parental self-efficacy, parental mental wellbeing and child behaviour (Lindsay, Strand, & Davis, 2011). Qualitative studies of the experience of parent training programmes also highlight that parents feel powerless before taking part and perceive that the knowledge they gain alongside support from other parents helps them gain control and feel able to cope, less guilty and socially isolated, more empathic towards their child, and more confident in their parenting (Kane, Wood, & Barlow, 2007). Teen Triple P (Ralph & Sanders, 2003) has been successfully adapted for adolescents with a stronger emphasis on growing independence and risky behaviour, however, improvements in family conflict and parental confidence were not maintained at six-month follow-up (Chu, Bullen, Farruggia, Dittman, & Sanders, 2015).

**Non-Violent Resistance (NVR).**

Many families who present to services for help with child and adolescent behaviour problems are living in a context of multiple stressors and inter-generational patterns of interpersonal difficultly (Jakob, 2016). Furthermore, child to parent intimidation and violence is becoming more widely recognised by researchers and policy makers (Coogan, 2014). Non-Violent Resistance (NVR) (Weinblatt & Omer, 2008) is a parent training programme that has been proposed as having the potential to respond to these issues. NVR is based on coercion theory, an extension of social learning theory, which proposes that antisocial behaviours develop in childhood when attempts to control problematic behaviour lead to escalation, and ultimately reinforcement when these attempts to control are abandoned (Patterson, 2016). In line with coercion theory, there is evidence that coercive, harsh and conflictual parenting styles are a significant risk factor for the development of childhood behaviour problems, and that childhood behaviour problems elicit harsher parenting practices (Smith et al., 2014). NVR trains parents to resist rather than attempt to control their child's behaviour and manage their own reactions, and this redirection of parents' attention towards their own behaviour is proposed to improve parental efficacy, reduce conflict, and improve family functioning. Like other programmes, NVR recognises the need to strengthen the parent-child relationship, and trains parents to use reconciliation gestures which also increase parental responsiveness to the needs of the young person (Jakob, 2015). A significant difference to other programmes is that NVR trains parents to engage their wider system and form a support network (Jakob, 2016).

**Evidence base for NVR.**

One controlled trial of forty-nine families in Israel found evidence that NVR reduced self-reported helplessness and permissiveness in parents of children with a range of behavioural problems, with parents also reporting significant reductions in problem behaviours at one-month follow-up (Weinblatt & Omer, 2008). NVR has also been applied in UK Child and Adolescent Mental Health Services (CAMHS) with evidence of reduced parental stress, improved family relationships, and reduced problem behaviour (Newman, Fagan, & Webb, 2014). NVR has also been piloted with foster carers in Belgium, with evidence found of significant improvements in child behaviour and parenting stress (Van-Holen, Vanderfaeillie, & Omer, 2016), and in Germany where it was found to be equally effective as Teen Triple P (T-PPP) in improving parental presence and reducing parental helplessness and depression, and more effective than both T-PPP and a waiting list control in improving behaviour (Ollefs, Von Schlippe, Omer, & Kriz, 2009). Therefore, although there is currently limited evidence for the effectiveness of NVR, the few studies to date do report significant improvements.

**The current service improvement project.**

The Bristol Young People's Specialist Substance Misuse Treatment Service (YPSSMTS) is a Specialist Child and Adolescent Mental Health Service (CAMHS). To be referred the young person must have a substance misuse problem and mental health issues or other complex needs. The service does not have the provision for MDFT or FFT and individual work can be slow and limited for many clients whilst others remain very difficult to engage. A 10-week NVR programme for parents (Table 1) was developed by a nurse and a specialist substance misuse worker from Bristol YPSSMTS and a specialist substance misuse worker from South Gloucestershire Young People's Drug and Alcohol Service (YPDAS) following their attendance at training provided by Partnership Projects UK.

Table 1

*NVR programme session by session content*

| Session | Content |
|---|---|
| 1 | Goal setting, outcome measures looking after yourself, case study |
| 2 | Learning about functional behaviour, button pushing and escalation |
| 3 | Creating a de-escalation plan |
| 4 | Learning about reconciliation gestures, recruiting supporters |
| 5 | Learning about refusing orders and breaking taboos, developing a safety plan |
| 6 | Preparing to announce the plan to resist the behaviour to the child |
| 7 | Reviewing the announcement to the child |
| 8 | How to use supporters, role playing the 'sit in' |
| 9 | Feedback and troubleshooting, developing a sustainability plan |
| 10 | Outcome measures, feedback forms, reflections on ending |

**Aim of the project.**

The service required an evaluation of the programme to assess effectiveness, acceptability, and identify areas for improvement.

**Method**

**Design.**

A mixed-methodology design was used. The quantitative component involved collecting questionnaire data at the beginning and end of the group, and at follow-up (6-8 weeks after the final session). The qualitative component involved individual interviews with a proportion of participants at follow-up.

**Participants.**

Individuals were eligible to take part in the study if they had completed the NVR programme. Data collection spanned 4 rounds of the programme (Groups 1-4). 8 participants were recruited from Groups 1 & 2 to provide questionnaire data and participate in individual interviews. 10 participants were recruited from Groups 3 & 4 to provide questionnaire data only and sent follow-up measures by post. Group 1 ended in July 2016, Group 2 in December 2016, and Groups 3 and 4 in April 2017. Demographic information for all participants is presented by group and in total in Table 2.

Table 2

*Group and overall demographic information*

| Characteristic | Group 1 (n=4) | Group 2 (n=4) | Group 3 (n=6) | Group 4 (n=4) | Total (n=18) |
|---|---|---|---|---|---|
| Parent age | 44-60 years (M= 50.75, SD = 7.27) | 32-52 years (M = 41.75, SD = 9.60) | 38-51 years (M = 47, SD = 5.24) | 50-53 years (M = 51.5, SD = 1.12) | 32-60 years (M=47.26, SD = 7.05) |
| Parent gender | Female 100% (4) Male 0% (0) | Female 50% (2) Male 50% (2) | Female 80% (5) Male 20% (1) | Female 50% (2) Male 50% (2) | Female 72.2% (13) Male 27.8% (5) |
| Parent situation | Single mother 75% (3) Mother alone (father living at home) 25% (1) | Single mother 25% (1) Father living elsewhere 25% (1) Cohabiting couple 50% (2) | Single mother 50% (3) Married couple 33.3% (2) Mother alone (father living at home) 16.7% (1) | Married couple 50% (2) Cohabiting couple 50% (2) | Single mother 38.9% (7) Married or cohabiting couple 44.4% (4) Mother alone (father living at home) 11.1% (2) Father living elsewhere 5.6% (1) |
| Parent level of education | University 75% (3) Secondary school 25% (1) | University 25% (1) Secondary school 75% (3) | University 80% (5) Unknown 20% (1) | University 100% (4) | University 72.2% (13) Secondary school 22.2% (4) |
| Parent ethnicity | White British 100% (4) | White British 100% (4) | White British 100% (4) | White British 100% (4) | White British 100% (18) |
| Child age | 16-17years (M = 16.75, SD = 0.43) | 16years (M = 16, SD = 0) | 14-17years (M = 15.17, SD = 1.34) | 17years (M = 17, SD = 0) | 14-17years (M = 15.98, SD = 1.10) |
| Child gender | Male 100% (4) | Male 100% (4) | Male 80% (5) Female 20% (1) | Male 50% (2) Female 50% (2) | Male 83.3% (15) Female 16.7% (3) |

**Recruitment.**

Participants were informed of the project when the programme began and given an information sheet and contact details in the final session. 100% of those eligible from groups 1 and 2 agreed to participate and were retained at follow-up. 100% of those eligible from groups 3 and 4 agreed to participate and 40% were retained at follow-up.

**Setting.**

Interviews were conducted at the Bristol YPSSMTS base. Interview participants were given travel expenses and a £5 voucher as a thank you for their time and effort.

**Ethics.**

Approval as a service evaluation was granted by the Avon and Wiltshire Mental Health Partnership Trust (AWP) Research and Development Department (R&D). Ethical approval was obtained from the University of Bath Psychology Ethics Committee (Reference Number 16-130) (Appendix F).

**Epistemology.**

*Realism* assumes that true cause and effect relationships exist and can be uncovered through a process of experimentation whereas *relativism* searches for meanings within a given context and assumes that objective reality does not exist because observations are always socially constructed (Willig, 2008). A *critical realism* position has been taken to this project because it aims to gain evidence about the programme that can be generalised whilst acknowledging that it will be socially constructed.

**Interpretive Phenomenological Analysis (IPA).**

IPA assumes that people naturally reflect on the meaning of significant life experiences, and aims to uncover the sense that people make of their experiences (Smith, Flowers, & Larkin, 2009a). It involves detailed examination of single cases and does not aim to generalise experiences across participants within the analysis, and because of this can highlight hidden and potentially important areas of similarity and differences within a sample. IPA was therefore chosen for this study because of its high sensitivity to individual experience. Another important element of conducting IPA is that the researcher is explicit about the potential biases they bring to the analysis. This is important because as a trainee clinical psychologist I have experience of running groups and working with parents, and may be prone to imposing my own views on the data.

**Sample size and power.**

18 individuals participated in the quantitative component of the project. A power calculation using G-Power found that a sample size of 15 would detect a medium effect size with adequate power of 80% for the quantitative measures. There is no prescriptive guidance around what sample size should be used in IPA, however, it is recommended that 4-10 interviews is adequate for doctoral level research (Smith, Flowers, & Larkin, 2009b). 8 individuals participated in the interviews.

**Procedure.**

Participants completed questionnaires at the beginning and end of the programme, and at follow-up (6-8 weeks later). The 8 participants from Groups 1 and 2 met with the researcher in person at follow-up and gave written informed consent before completing the follow-up questionnaires and taking part in a 45-minute semi-structured interview. The interviews were recorded using a Dictaphone and the interview transcripts were typed verbatim with all identifying information omitted. The 10 participants from Groups 3 and 4 gave written consent in the final session of the programme and were sent follow-up measure by post to be returned using a pre-paid envelope.

**Measures.**

The questionnaires used by the service are all recommended for routine outcome monitoring by the CAMHS Outcome Research Consortium (CORC).

The Brief Parental Self-Efficacy Scale (pSEQ) (Woolgar, 2013) was used to measure parental self-efficacy. The pSEQ is 5-item self-report questionnaire and items are rated on a 5-point likert scale ranging from ‘strongly disagree’ to ‘strongly agree’, with higher scores indicating higher parental self-efficacy. No psychometric data is currently available.

The Score-15 (Stratton et al., 2014) was used to measure family functioning. The first part of the Score-15 is a 15-item self-report questionnaire that assesses family patterns of interaction. Items are rated on a 5-point likert scale ranging from ‘describes us very well’ to ‘describes us not at all’, with lower scores indicating better functioning. The Score-15 has been found to have good internal consistency .89 (n=515) and sensitivity to clinical change in a large clinical sample (Stratton et al., 2014).

The Young Persons’ Specialist Substance Misuse Outcome Record (YPOR) (Public Health England, 2013) is a self-report measure of substance misuse behaviour and general wellbeing. It was used to assess for reductions in substance misuse. The YPOR

includes some questions taken from validated surveys, but is not a clinically validated measure.

The Goal Based Outcomes (GBO) (Law & Jacob, 2015) measures how far participants feel they have come towards reaching their goals. Up to three goals are rated on a 0-10 scale with 0 indicating not reached at all and 10 indicating reached completely. Psychometric data is not available.

**Semi-structured interview.**

A draft topic guide was discussed with a previous programme attendee and then piloted with a second previous programme attendee. The topic guide (Appendix G) included several prompts; however, the interviews were conducted flexibly so that the focus remained on topics the participants felt were relevant.

**Analysis.**

Quantitative data was analysed using SPSS. Qualitative data analysis followed the steps provided by Smith et al. (2009a). The transcript for Participant 1 was read and re-read and initial notes were made in the right-hand margin. The left-hand margin was then used to write down emerging themes. Emerging themes and accompanying quotes were then put into a list in order of when they appeared in the data and combined into clusters of subordinate and superordinate themes. This same process was then carried out for Participant 2, and the theme clusters were combined with those of Participant 1. This process was then followed for Participant 3 and then 4, which yielded a set of superordinate and subordinate themes for Group 1. Theme clusters were expanded, collapsed, or added as necessary. As the data from Group 2 was relating to an entirely different experience, the process was followed from the start and the themes from the two groups were combined at the end.

**Validity checks.**

To check for satisfactory administration of the topic guide and obtain guidance on identifying themes, the transcript for Participant 1 was analysed using IPA by the third author, a clinical psychologist working in a CAMHS service with experience of qualitative research. Themes and supporting quotes at both group and overall level were developed in discussion with the second and third author.

## Results

### Parental self-efficacy.

A one-way repeated measures ANOVA was conducted on complete data sets to compare scores on the pSEQ at Time 1 (pre-intervention), Time 2 (post-intervention) and Time 3 (6-8 week follow up). The means and standard deviations are presented in Table 3. There was a significant effect for time, F (2,8) = 10.57, p = .006, with multivariate partial eta squared = .73 indicating a medium effect size. Post hoc tests using the Bonferroni correction revealed that pSEQ scores significantly increased from Time 1 to Time 2 (p = .003) with a mean increase of 4.80 (95% confidence interval = 1.90 - 7.79). There was also a significant increase in pSEQ scores from Time 1 to Time 3 (p = .009) with a mean increase of 4.90 (95% confidence interval = 1.34 - 8.47. There was no significant difference in scores between Time 2 and Time 3 (p = 1.00) with a mean increase of .10 (95% confidence interval = 2.11 - -2.31). This suggests that parental self-efficacy improved by the end of the programme and that this was maintained at follow-up.

### Family functioning.

A one-way repeated measures ANOVA was conducted to compare scores on the SCORE-15 at Time 1 (pre-intervention), Time 2 (post-intervention) and Time 3 (6-8 week follow up). The means and standard deviations are presented in Table 3. There was no significant effect for time, F (2,7) = 2.63, p = .14, multivariate partial eta squared = .43. As data from only 9 participants was complete for the ANOVA, three paired samples t-tests were also conducted with all the available data for the SCORE-15. There was a statistically significant increase in SCORE-15 scores from Time 1 (M = 2.80, SD = .58) to Time 2 (M = 2.36, SD = .57), t(14) = 3.70, p = 0.002 (n=15) with a mean difference of 0.44 (95% confidence interval = .19 - .69. There was a non-significant increase in SCORE-15 scores from Time 1 (M = 2.57, SD = .52) to Time 3 (M = 2.19, SD = .46), t(9) = 1.70, p = .124 (n = 10) with a mean difference of 0.34 (95% confidence interval = -.13 - .88, and a non-significant increase in SCORE-15 scores from Time 2 (M = 2.10, SD = .08) to Time 3 (M = 2.15, SD = .16), t(8) = .26, p = .80 (n=9) with a mean difference of -.05 (95% confidence interval = -.52 - 41. This indicates that family functioning had improved by the end of the programme but that this did not remain significant at follow-up.

**Substance misuse.**

It was not possible to obtain most YPORS because of the infrequent nature of adolescents' contact with the service. It was not possible to conduct any analyses.

Table 3

*pSEQ and Score-15 outcomes*

| Measure | Pre | | Post | | Follow-up | |
|---|---|---|---|---|---|---|
| | M | SD | M | SD | M | SD |
| pSEQ (n = 10) | 16.10[ab] | 3.51 | 20.90[a] | 1.73 | 21[b] | 1.49 |
| Score15 (n = 15) | 2.80[c] | 0.58 | 2.36[c] | 0.57 | | |
| Score15 (n = 10) | 2.57 | 0.52 | | | 2.19 | 0.46 |
| Score15 (n = 9) | | | 2.10 | 0.08 | 2.15 | 0.16 |

[a] $p < 0.05$; [b] $p < 0.05$; [c] $p < 0.01$

**Goal based outcomes.**

GBO scores were available for 8 participants for both for Time 1 and Time 2. The goals that were chosen by these participants are presented in Table 4 and descriptive statistics of this sample are presented in Table 5.

Table 4

*No. of times goals selected (n=8)*

| Goal theme | No. |
|---|---|
| To stop or reduce drug or alcohol use | 7 |
| For my child to be less aggressive or violent | 3 |
| For my child to stop stealing | 3 |
| For my child to come home on time or stop going missing | 2 |
| For my child to be happier | 1 |
| To be able to trust my child again | 1 |
| For my child to stop selling drugs | 1 |
| To spend more time with my children | 1 |
| For my child to stop harming himself | 1 |
| For my child to attend school | 1 |
| For my child to have hobbies | 1 |

Table 5

*Descriptive statistic GBO scores at Time 1 and Time 2*

| Measure | Pre | | Post | |
|---|---|---|---|---|
| | M | SD | M | SD |
| GBO (N = 8) | 3.90[a] | 1.80 | 6.66[a] | 2.20 |

[a] $p < 0.01$

A paired samples t-test was conducted between Time 1 and Time 2. There was a statistically significant increase in GBO scores from Time 1 to Time 2, t (7) = 10.03, p = 0.00 with a mean difference of 2.77 and confidence interval of 2.17 to 3.43.

The final analysis of the interview data produced three superordinate themes: experience of the group, change and challenges.

**Theme 1: Experience of the group.**

The data from the interviews suggests that parents experience the programme as supportive, collaborative, and different to other approaches (Table 6).

*Support*

All participants spoke to some extent of how they felt desperate for support and willing to try anything before attending the programme. All participants also spoke of feeling less alone in the group, and for some participants this was linked to feelings of guilt and shame. Some participants also spoke about how being open in the group encouraged them to break their silence outside of it.

*Collaboration*

All participants felt that working together with the facilitators and each other helped them to learn. A theme endorsed by most participants was that clarity was an important factor. In Group 1, there was a theme of a lack of clarity, whereas in Group 2, the clear and structured format of the programme following improvements was commented on. Some participants also described valuing that the facilitators did not assume the role of expert.

*A different approach*

Amongst those participants who had already attended other parenting courses (n=5), some spoke of experiencing the programme as less authoritarian. Others spoke of seeing NVR as a less conflictual approach.

Table 6

*Experience of the group themes and supporting quotes*

| Theme | Sub-theme | Supporting Quote |
|---|---|---|
| Support | Desperate for support | *'My son's behaviour was getting so bad, likely really aggressive, I was just hoping to get some support. I was willing to try anything.' (Participant 1)*<br><br>*'I needed to do something, I'd got to the end. I'd done everything else that I could do.' (Participant 4)* |
| | Feeling less alone | *'It was nice because you feel like you're not the only one with a child's who just like, heading down' (Participant 7)*<br><br>*'It was just really comforting for one thing to know you weren't on your own…. there's a deep shame isn't there, if you're going through stuff like this.' (Participant 3)* |
| | Encouraged to break the silence | *'Yeah that's probably the major, the most that I took away from the course…talking to friends, if they've got any, not just about drug abuse problems, but any problems really; to share them and to let that individual know…so you're not brushing it under the carpet' (Participant 2)*<br><br>*'the fact that things are no longer hidden – it means that behaviour has to be confronted, it has to be acknowledged, there's no need to be, it's not private.' (Participant 3)* |
| Collaboration | Working Together | *'I think it's just helpful when you're understanding something because different people put things in different ways' (Participant 3)*<br><br>*'Yeah, I think you need to do it as a group, it wouldn't be as good on a one to one… you need to know other people's problems because you pick up on things that they're doing' (Participant 8)* |
| | Desire for clarity | *'It got clearer as we kept asking for more clarity and more visuals, but it needs to be much clearer up front.' (Participant 4)*<br><br>*At the beginning of each session it was very clear what we were going to cover in that session and then as we went along.' (Participant 6)* |
| | Not an expert model | *"We were able to chat freely and help each other out if we thought we knew what the other person was trying to get at. It wasn't a strict classroom environment.' (Participants 5)*<br><br>*'They weren't telling you what to do they were giving you suggestions' (Participant 7)* |

Table 6 continued.

*Experience of the group themes and supporting quotes*

| | | |
|---|---|---|
| A different approach | Less authoritarian | *'I actually thought it was going to be some sort of parenting course and they were going to tell us 'so here are some techniques' and so on, but that's not what it was like at all'. (Participant 1)*<br><br>*'It was different. Usually it's 'don't do this, do that', and I suppose it was another way of looking at it.' (Participant 7)* |
| | Less conflictual | *'So many parenting courses is to have more conflict with them isn't it, and to start putting up so many barriers really with the parenting, which then just escalates' (Participant 2)*<br><br>*'It's something to do with teaching people to engage with equality, to not escalate, to not, to have healthy relationships and to assert themselves as parents that is very very valuable, and I've not come across it anywhere else.' (Participant 4)* |
| | Uniquely valuable | *'I just think that we've just got the whole thing backwards, so much of the time, and we invest in the easy answers, so things like this that take people, that give them skills and techniques that they can actually use are probably a little bit more expensive than say a prescription, but ultimately they work' (Participant 3)*<br><br>*'It's definitely worth the government investing money in. It's definitely better than the other courses.' (Participant 7)* |

**Theme 2: Change.**

The data from the interviews suggests that participants felt that they had taken new learning from the programme and had adopted new behaviours which they felt had impacted their child, self and wider family (Table 7).

*New learning*

Some participants felt that attending the course had highlighted their lack of power within their relationship with their child. All participants spoke of learning about the reciprocity of the relationship between them and their child, and about how their responses could escalate conflict. All participants also spoke of how they felt the programme had helped them learn how to de-escalate conflict with their child.

*New behaviour*

All participants reported enforcing boundaries with their child more after attending the programme. Some participants also spoke of spending more time with their child as a way of helping to repair the relationship, and for some also as a way of monitoring their child's behaviour more closely. There was also an overall theme that participants had recruited supporters to help them.

*Impact on child, self and wider family*

All participants with one exception reported that communication between themselves and their child had improved since attending the programme. Many participants also felt that they were less stressed since attending the programme, and that this helped create a more relaxed home environment. There was one exception to this as Participant 4 reported feeling that taking part in the programme had an adverse outcome.

Table 7

*Change themes and supporting quotes*

| Theme | Sub-theme | Supporting quotes |
|---|---|---|
| New learning | Reciprocity of the relationship | *'So, I'd had an argument with [my son] that week and they'd pulled it out and said 'see if you'd of stopped it here that wouldn't have happened' and it was like 'yeah I can see it now'.' (Participant 7)*<br><br>*'The key is keeping calm, as soon as you start bubbling up, the child's gonna start bubbling up.' (Participant 8)* |
| | Learning how to de-escalate conflict | *'The main thing that I found helpful was the sort of, how to deal when things get out of hand, the de-escalation and things to do in order to stop a situation from becoming a battlefield. That was very, very useful.' (Participant 6)*<br><br>*'[The facilitators] said about you know striking while the iron's cold. There's no point is there, when you look at it like that? When someone says it and there's so much sense in that.' (Participant 5)* |
| | Lack of power | *'I became aware that I was in a situation where my power wasn't what it should be.' (Participant 4)*<br><br>*'I just always went with him, and just ended up giving in…. I was too scared basically.' (Participant 1)* |

Table 7 continued.

*Change themes and supporting quotes*

| Theme | Sub-theme | Supporting quotes |
|---|---|---|
| New behaviour | Enforcing boundaries | *'I think it also gave me as well confidence that it's OK to hold the line as a parent. Even if they don't do what you say, just to keep saying it and to keep putting that message in.' (Participant 4)*<br><br>*If I say I'm going to do something, I do it, whereas before I'd just say and say and say and repeat myself because he knows I'm not gonna do it.' (Participant 7)* |
| | Spending more time with my child | *'Cos it's very difficult because he's a teenage boy you know, he doesn't want to do stuff with him mum because it's just not cool is it, but I think things like going to the cinema are things that we can do together, and he says thank you afterwards, so yeah, it's really nice.' (Participant 6)*<br><br>*'I got us both into a gym and he loves swimming so every Sunday I do my session on the bike then get in the pool with him. I'm keeping tabs on him, every time I can get him out and see how he is and know what he's thinking'. (Participant 5)* |
| | Using supporters | *'so yeah I can text or call, and they don't necessarily think they have to do anything expect just turn up, you know just have a cup of tea and be present, and that by itself completely diffuses.' (Participant 3)*<br><br>*'We've got supporters and he knows the one I've got, in fact we're all going [away] together at the weekend' (Participant 5)* |
| Impact | Communicating more | *'I also feel like he's telling me more about what he's doing, so I'm more aware of what's going on.' (Participant 1)*<br><br>*'I'm communicating more with him, and that's become two-ways.' (Participant 2)* |
| | Less stressed | *'I'm not as stressed, it was very very stressful when [my son] was at a really really bad point.' (Participant 6)*<br><br>*'It's given people in the family a more relaxed time. Cos if I'm worried, [my partner]'s worried, and then if they kids are up they can sense it, they're not stupid'. (Participant 8)* |
| | Change for the worse | *'The current situation is that my youngest son, he reacted really badly. They both become really resentful and more difficult.' (Participant 4)* |

**Theme 3: Challenges.**

The data from the interviews suggests that participants experienced challenges in the programme in the form of emotional demands, barriers to sharing, and difficulties engaging their wider systems (Table 8).

*Emotional demands*

Two participants from Group 1 spoke of how the course had challenged them personally because it involved addressing past trauma. Another participant reported concerns over listening to disclosures. Only these participants expressed a desire for further support.

*Barriers to sharing*

This was another subordinate theme only found in Group 1. Two participants spoke of how feeling different to other group members limited how comfortable they felt to share. One participant also reported concerns over confidentiality.

*Engaging the wider system*

Three participants described how difficulties encountered in getting people in their wider system engaged in supporting them influenced the extent to which they could put their new learning into practice. One participant spoke of experiencing difficulties in recruiting supporters, and another participant spoke of feeling like the changes that they had tried to make after attending the programme were being undermined by their ex-partner. Another participant described how it had been difficult for siblings to understand the approach and that this could lead to new conflicts in the family system.

Table 8

*Challenges themes and supporting quotes*

| Theme | Sub-theme | Supporting quotes |
|---|---|---|
| Emotional demands | Facing past trauma | *'part of the reason why he has these problems is I was in a very violent relationship…. So, it's really hard to manage my own responses and to know what's appropriate.' (Participant 3)*<br><br>*'some of the stuff that needed unpacking for me was surviving my previous marriage and the impact that it had on me as a woman and on my sense of self and parenting style.' (Participant 4)* |

Table 8

*Challenges themes and supporting quotes*

| Theme | Sub-theme | Supporting quotes |
|---|---|---|
| Emotional demands | Listening to disclosures | *'if you were in a little bit more of an emotionally unstable position, where I think possibly some of these other parents on the course were, it may be difficult to listen and hear what some of the others have been dealing with.' (Participant 2)* |
| | Desire for follow-up support | *'Well just a little bit of, well obviously, you can't make changes overnight, and yeah a continued presence would be helpful.' (Participant 3)*<br><br>*'I think you're only just getting into the grit of changing the family system when the course stops, I think it's a much longer programme.' (Participant 4)* |
| Barriers to sharing | Feeling different | *'I didn't share as much maybe with the group because I felt they might look at me and think 'well why is she here' because I've got no problems or, you know, compared to them.' (Participant 2)*<br><br>*'Well, I was quite a bit different because I don't actually mind him smoking cannabis, and that was different to other people in the group. I was a bit worried that they might think that I was a bad mum.' (Participant 1)* |
| | Concerned about confidentiality | *'Yeah um because, our two sons are good friends. I didn't want to say things that maybe would drop the other son in it' (Participant 2)* |
| Engaging the wider system | Difficulty recruiting supporters | *'The couple of friends that I have tried to talk to, they just don't want to know.' (Participant 2)*<br><br>*'We were supposed to do like sit ins and that type of thing, and we haven't done any of that because my parents turned round and said that they didn't want to do it.' (Participant 2)* |
| | Being undermined | *'I think that the system the parent parenting is in is an important factor as to how you can uphold it or not, so if you have an undermining parent I think there's a high risk of damage.' (Participant 4)* |
| | Explaining to siblings | *'I did say in there that it would be nice, he's got a sister…. And she didn't, still doesn't really understand why, in her eyes we're mollycoddling him, you know spoilt bother thing, but it's not, we're just not escalating.' (Participant 5)* |

## Discussion

The pSEQ data suggests that participants experienced a significant and maintained improvement in feelings of self-efficacy. This fits with evidence from traditional programmes in the UK (Lindsay et al., 2011) and previous studies of NVR (Weinblatt & Omer, 2008). The SCORE-15 data suggests that family functioning was significantly improved post-intervention but that this improvement was not entirely maintained. This fits with a previous UK based study of NVR which found evidence of improved family relationships post-intervention (Newman et al., 2014). It is plausible that lack of maintenance may be related to some of the issues highlighted in the qualitative analysis about engaging supporters, however, this requires further research. The lack of engagement from adolescents with the service in most cases meant that the YPOR could not be used to measure for change in substance misuse. However, the GBO data highlights that for some participants issues such as aggressive behaviour, stealing and going missing were of equal importance though reducing substance misuse was identified as one goal by most. Participants reported a significant improvement in reaching their goals by the end of the intervention, which suggests that the programme had a positive impact on behaviour as has been found with traditional approaches (Lindsay et al., 2011) and NVR (Weinblatt & Omer, 2008).

The qualitative data highlights that participants found the group supportive, collaborative, and less authoritarian than other parenting courses. This fits with previous qualitative studies of parenting interventions in that participants felt powerless and de-skilled before taking part, and found the group support helpful (Kane et al., 2007). The themes of collaboration and difference to other courses are unique to this study and suggest that NVR may have been a welcome change of approach. The participants were explicitly asked how their experience of NVR compared to other parenting interventions at the end, however, all five participants had spontaneously commented on this earlier in the interview. The qualitative data also highlighted that participants learnt about issues of power in their relationship with their child, and how to avoid and de-escalate conflict. They also reported that they had become more proactive in enforcing boundaries and spending time with their child, which is of note as enforcing boundaries is not an explicit aim of NVR training. Participants also spoke about how supporters helped them to make these changes, and how they felt their child was communicating more with them and that they were feeling less personally stressed. Previous qualitative studies have highlighted similar processes (Kane et al., 2007), however, the themes of de-escalation and bringing in supporters are unique to this study which is perhaps unsurprising as these are particular

features of NVR. Previous qualitative studies have highlighted that participants felt that they had more empathy for their child and this did not arise in this study. Participants did speak of spending more time with their children which is hypothesised as increasing parental awareness of the child's needs in NVR (Jakob, 2015).

Unique to this study was a theme of challenges. It is not known whether this might reflect a reporting bias in previous studies but highlights that parents might find it difficult to engage due to feelings of difference and concerns about confidentiality which may be common to other parenting programmes. Participants also spoke of the emotional demands of facing past traumas and listening to disclosures. Three out of eight interview participants spoke of past abuse which fits with previous research which found that thirty eight percent of families treated with NVR had multiple stressful issues including intergenerational patterns of abuse (Freeman et al., 2013). Some participants also spoke of difficulties in building a supportive network outside of the programme and how this limited how much of their learning they could apply. This fits with recent developments within NVR to manage the issues of multi-stressed families, and Jakob (2016) cites the work of Madsen (2007) in suggesting that therapists help clients identify and distinguish between safe and supportive, critical and prescriptive, and coercive relationships, and help clients to utilise the relationships that will be most helpful for them in making changes (Jakob, 2016; Madsen, 2007). Despite ongoing challenges, most interview participants felt satisfied with informal follow-up support.

**Limitations.**

Because of the small number of participants, the generalisability of the quantitative data is limited. 38.9% of families in the sample where single-parent, which is close to the latest local census statistic of 35.3%, however, all participants were White British, whereas 16% of the local population are of Black or Ethnic Minority (BME) origin, and there was also an over-representation of university educated participants, with 72.2% educated to degree level or above compared to the latest local census statistic of 32.8% (Bristol City Council, 2011). This raises important questions about the accessibility of the programme to BME populations and less educated families. A related limitation is that only those who had completed the programme were approached, creating a selection bias towards only recruiting individuals who found the programme accessible, and follow-up data was only obtained from 40% of questionnaire-only participants. It was also unfortunately not possible to obtain data regarding the frequency of substance misuse from the perspective of the adolescents.

**Implications for service improvement.**

The study was designed as a service improvement project and the results were discussed with the programme facilitators. Several recommendations were made (Table 9).

Table 9

*Recommendations for Service Improvement*

| |
|---|
| 1. Have a clear visual structure including timeline of weekly content |
| 2. Pre-screen participants for potential trauma issues and signposting needs |
| 3. Discuss issues of difference and confidentiality early in the programme |
| 4. Prepare participants for potential difficulties in recruiting supporters |
| 5. Allow time for feedback of experiences of recruiting supporters |
| 6. Offer to include siblings in sessions and other meetings |
| 7. Include a standard follow-up session for all participants |
| 8. Consider a regular drop-in NVR 'clinic' |
| 9. Consider issues of accessibility in course materials and pre-course information |

**Future research.**

Further research should use a larger sample to ensure generalisability of the quantitative outcomes and saturation for the qualitative themes. It should also investigate the experiences of people who do not continue with the programme as this is likely to highlight some important issues. It would also be helpful to repeat the study with a more ethnically diverse sample. Lastly, it will be important to explore the views of adolescents themselves in future research, perhaps by including adolescents in the programme somehow or utilising social media to collect data.

**Conclusions.**

The qualitative data suggests that participants felt that the programme was a positive and helpful experience. The sustained improvement in parental self-efficacy supports this. The patterns of scores for family functioning also reflects the interview data, and suggests that positive gains are made, but these may be difficult to maintain for some families. Evidence was also found that attending the programme led to improvements in a broad range of problem behaviours, however, further studies will need to assess whether these gains are maintained.

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**Main Research Project: Investigating the relationship between social anxiety and mental imagery in autistic adults**[1]

**Word count:** 4996 (excluding tables, figures and references)

**May 2018**

**Internal Supervisor:** Dr Ailsa Russell

**Target Journal:** Behaviour Research and Therapy (Author Guidelines – Appendix H)

This journal was selected because of its focus on experimental research aimed at understanding psychological disorders and their prevention and treatment using cognitive and behavioural models and interventions. The journal has previously published research investigating mental imagery and social anxiety.

[1] The term 'autistic adults' will be used throughout the paper instead of the term 'people with Autism Spectrum Disorder (ASD)'. This is because of recent research showing that this terminology is preferred by the autism community (Kenny et al., 2016).

**Introduction**

Social Anxiety Disorder (SAD) is characterised by a severe and persistent fear of social or performance situations (American Psychiatric Association, 2013). It is a disabling condition that predicts other serious problems such as depression, substance misuse and increased risk of suicide (Rapee & Spence, 2004). Lifetime prevalence of SAD in the general population is estimated at 12% (Kessler et al., 2005), however, a recent study of a non-treatment seeking population found that 50% of autistic adults also met the diagnostic criteria for SAD using a semi-structured diagnostic interview, and scored significantly higher on three self-report measures of social anxiety (Maddox & White, 2015). Autism is a pervasive developmental condition characterised by impairments in social communication, social interaction and restrictive repetitive patterns of behaviour, interests or activities (APA, 2013). Although social anxiety could be conceptualised as part of autism due to social interaction difficulties, research evaluating the overlap between screening measures of autism and SAD in a large sample of young adults found evidence that the conditions are distinct (White, Bray, & Ollendick, 2012). It is widely accepted that the difficulties that autistic people can experience with social reasoning, empathy, conversation skills, and sensory processing make them particularly vulnerable to considerable stress and anxiety (Attwood, 2007). One proposed route to SAD in autism is that higher trait anxiety in autistic people makes social situations overwhelming, which leads to avoidance of social situations and negative social experiences which create more anxiety (Bellini, 2006).

NICE guidelines for adults recommend that autistic people with and co-existing SAD should be offered Cognitive Behavioural Therapy (CBT), but that delivery should be adapted, for example, by taking a more structured and visual approach, and placing a greater emphasis on behaviour change (National Institute of Clinical Excellence, 2016). There is an emerging evidence base for the utility of adapted CBT for autistic people, however, interventions tend to be transdiagnostic and more research is needed to investigate the applicability of specific models of anxiety (Lang, Regester, Lauderdale, Ashbaugh, & Haring, 2010; Spain, Sin, Calder, Murphy, & Happe, 2015). The dominant cognitive-behavioural model of social anxiety proposes that high standards for social performance and negative beliefs about the self are the core, and that once in a social situation, individuals believe they are in danger of behaving unacceptably and being judged (Clark & Wells, 1995). The model emphasises the role of self-focused attention, negative self-processing, and safety behaviours in maintaining social anxiety (Clark, 2005). Model-specific Cognitive Behavioural Therapy (CBT) that targets these processes

is effective in treating SAD in typically developing adults (Clark et al., 2006; Clark et al., 2003).

Within negative self-processing, experiencing negative observer-perspective mental images is proposed as contributing to the onset and maintenance of SAD in the cognitive-behavioural model (Clark & Wells, 1995). Research with typically developing adults found that patients meeting diagnostic criteria for social phobia were significantly more likely to report experiencing negative observer-perspective mental images when anxious in a social situation in comparison to non-patient controls (Hackmann, Surawy, & Clark, 1998), and significantly more likely to take an observer-perspective when asked to imagine a social situation in which they felt anxious (Wells, Clark, & Ahmad, 1998). Furthermore, research has found that social phobia patients reported feeling more anxious, believing that they look more anxious, and believing that they are performing worse when instructed to hold in mind a negative observer-perspective image of themselves in comparison to when instructed to hold a more positive image in mind (Hirsch, Clark, Mathews, & Williams, 2003). It has also been found that only High Socially Anxious (HSA), and not Low Socially Anxious (LSA), individuals show significant differences on ratings of anxiety and performance when asked to hold in mind either a negative or positive image of themselves when giving a speech (Vassilopoulos, 2005). Research has also found that such images tend to be linked to adverse events that occurred around the time of the onset of the disorder (Hackmann, Clark, & McManus, 2000). NICE guidelines state that individual CBT based on the Clark and Wells model should include the use of video feedback aimed at correcting distorted negative self-imagery (National Institute of Clinical Excellence, 2013). Rescripting images relating to past events has also been shown to be effective (Wild, Hackmann, & Clark, 2007).

A recent systematic review of empirical research evaluating CBT interventions for SAD in the context of autism found only four single (n = 1) case studies (Spain, Sin, Harwood, Mendez, & Happe, 2017), three of which were adult interventions. All interventions consisted of psychoeducation, developing a hierarchy of anxiety-provoking situations, and exposure tasks. Cognitive interventions were also included in three studies. The results suggested that the interventions were effective and that self-reported social anxiety symptoms decreased, however, none mentioned imagery work. A rationale for not offering imagery work was not provided in any cases, however, the reviewers hypothesised that this may be because imagery work is ‘complex to understand, or may not be required’ for autistic people (Spain et al., 2017). Therefore, it is not currently known whether autistic

people experiencing SAD experience negative observer-perspective mental imagery in social situations, and current evidence suggests that imagery work is being omitted from CBT interventions for this client group. Given the evidence that autistic people tend to think more in image form (Hare, Wood, Wastell, & Skirrow, 2015), and in realistic, photograph like, pictures from memory (Crespi, Leach, Dinsdale, Mokkonen, & Hurd, 2016), it is possible that higher trait use of mental imagery in autistic people may be an important contributory factor accounting for the increased prevalence of SAD.

Autistic people are believed to have difficulties with introspection (Frith & Happé, 1999) and metacognition (Carruthers, 2009). This is perhaps one reason why there has until recently been a lack of research into the role of mental imagery in anxiety for this population. Ozsivadjian et al. (2016) explored the presence of anxious imagery in autistic and typically developing children divided into High Anxiety (HA) and Low Anxiety (LA) groups using an adapted version of the semi-structured interview schedule used in previous research (Hackmann et al., 1998). Interestingly, autistic and typically developing HA children, and autistic LA children, reported experiencing more spontaneous anxious imagery than typically developing LA children. Additionally, both the HA groups reported experiencing anxious imagery more frequently, when controlling for everyday use of imagery, and experiencing these images as more upsetting in comparison to the LA groups, with no group differences in image vividness. This is encouraging evidence that mental imagery may have a role in anxiety experienced by autistic people and demonstrates that an interview methodology can be used in this population. The current study aims to build on this research by investigating the presence and characteristics of mental imagery in social situations in LSA and HSA autistic people.

**Hypotheses.**

1) HSA autistic adults will report experiencing mental imagery in social situations more frequently than LSA autistic adults
2) HSA, but not LSA, autistic adults will report experiencing mental imagery of a social situation from an observer as opposed to field perspective
3) HSA autistic adults will report experiencing mental imagery of a social situation as more distressing but not more vivid than LSA autistic adults
4) Experiencing observer-perspective and distressing mental images of a social situation will significantly predict social anxiety scores after generalised anxiety (Bellini, 2006) and fear of negative evaluation (Clark & Wells, 1995) are controlled for in a sample of autistic adults.

## Method

### Design.

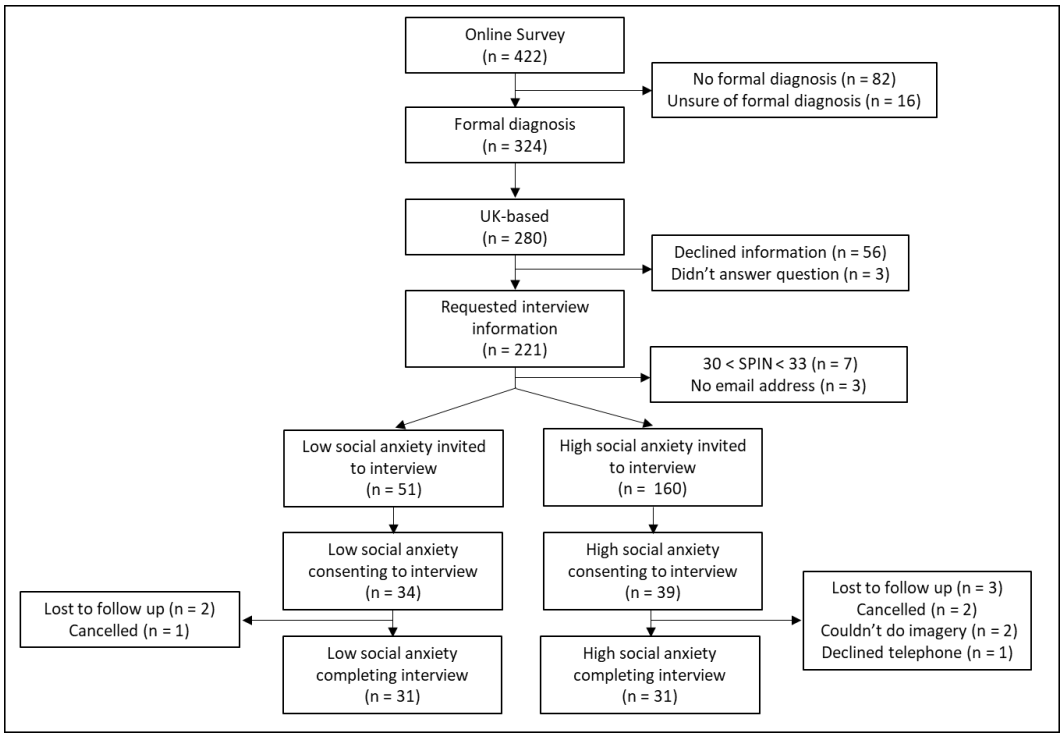
The study used a mixed design with one between-groups factor (HSA and LSA) and one within-groups factor (Relaxed Image 1, Social Situation Image, Relaxed Image 2). Participants were adults (≥ 18 years) with a clinical diagnosis of autism. As the initial stage of the study was conducted online, confirmation of diagnosis was via self-disclosure in response to the question 'Do you have a formal diagnosis of Autism/Asperger's?' Participants were recruited online through autism focused Facebook groups, advertising on the National Autistic Society (NAS) website, and contacting local support services nationally. Posters were also displayed on the University of Bath campus.

Recruitment was in two stages. Participants were first invited to take part in an online survey. Participants who consented to follow-up contact at the end of the survey were divided into LSA and HSA groups and invited to take part in an imagery interview.

Survey participants were eligible to enter a prize draw for one of two £25 e-vouchers and interview participants each received a £5 e-voucher. Recruitment was open from July 2017 to February 2018.

Figure 1

*Participant recruitment process*



**Procedure.**

The survey was created using Qualtrics software and accessed via internet link. Participants were presented with a study information sheet and consent form before completing multiple-choice questionnaires. Participants were automatically informed that they were not eligible to participate if they indicated that they were either under 18 years-old or not autistic. Following the survey, participants were asked to provide an email address if they wished to receive information about the second stage of the study. Those eligible were sent an internet link to a second information sheet and consent form and asked to provide a telephone number. Interviews were arranged by email or telephone depending on the participants' preference. An interview script was used to standardise the process (Appendix I) and interviews were recorded using a Dictaphone. Following the interviews, participants were sent a debrief sheet and a £5 e-voucher. Winners of the prize draw were selected using a random number generator. The online survey and imagery interview were both independently piloted with two autistic people, once in person and once over the telephone.

**Measures and tasks.**

AQ-10 (Allison, Auyeung, & Baron-Cohen, 2012) - The AQ-10 is a short screening version of the Autistic-Spectrum Quotient (AQ) (Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001). 10 items are rated using a 4-point Likert scale and scores range from 2-10. Scores of 6 and above indicate possible autism and the measure has demonstrated good discriminate reliability and internal consistency (alpha = .85) (Allison et al., 2012). This measure was included to compare scores between the groups.

The Social Phobia Inventory (SPIN) (Connor et al., 2000) - The SPIN is a measure of SAD. 17 items are rated using a 5-point Likert scale and scores range from 0-68. Higher scores indicate higher social anxiety, and a score of 19 and below indicates no social anxiety. The measure has demonstrated good test-retest reliability and excellent internal consistency (alpha = .94) (Connor et al., 2000). This measure was included to create the LSA and HSA groups and has been used with autistic young adults previously (Wood, Russell, & Draper, 2014). The SPIN scores in the study population (N = 324, M = 39.69, SD = 14.27) were much higher than those found previously in non-patients controls (M = 12.1, SD = 9.3), and almost equal to patients meeting diagnostic criteria for SAD (M = 41.1, 10.2) (Connor et al., 2000). This meant that the recommended clinical cut-off of 19 could not be used. A SPIN score of 31.4 has been shown to distinguish between mild and moderate severity of SAD using the Clinical Global Impressions of Severity (CGI-S) scale

with a standard error of 0.54. (Connor et al., 2000). SPIN cut-offs of 30 and below for the LSA group, and 33 and above for the HSA group were therefore used instead.

Brief Fear of Negative Evaluation Scale (BFNE) (Leary, 1983) - The BFNE measures the extent to which people experience fear of negative evaluation from others. 12 items are rated using a 5-point Likert scale and scores range from 12-60 with higher scores indicating higher fear. The scale has demonstrated excellent internal consistency (alpha = .90) (Leary, 1983). This measure was included to control for fear of negative evaluation. A shortened version with the reverse-worded items removed has been used with autistic adults previously (alpha = .94) (Maddox & White, 2015), however, the full version was used in the current study following piloting with the view that items could be removed later if the full measure was found to be invalid.

Spontaneous Use of Imagery Scale (SUIS) (Reisberg, Pearson, & Kosslyn, 2003) - The SUIS measures use of mental imagery in daily life. 12 items are rated on a 5-point scale and scores range from 12-60 with higher scores indicating higher use. The scale has demonstrated good reliability, convergent validity with measures of imagery ability, and good internal consistency (alpha = .86). (Nelis, Holmes, Griffith, & Raes, 2014; Reisberg et al., 2003).This measure was included to compare scores between groups. This measure has not been validated in an autistic sample.

The Generalised Anxiety Disorder 7 - item (GAD-7) (Spitzer, Kroenke, Williams, & Lowe, 2006) - The GAD-7 rates the severity of anxiety symptoms. 7 items are rated on a 4-point Likert scale and scores range from 0-21 with higher scores indicating higher severity. The measure is widely used in UK primary care mental health services and has demonstrated excellent internal consistency in the general population (alpha = .92) (Spitzer et al., 2006). The measure has not been validated in an autistic sample, however, was chosen to control for generalised anxiety because it uses concrete language and is quick and simple to complete.

Adapted Mental Imagery Interview (Appendix I) - The adapted Imagery Interview used by Ozsivadjian et al. (2016) and permission to adapt the measure for the current study, was obtained through personal communication. Participants imagine a relaxed situation, then a situation in which they feel socially anxious, and then a relaxed situation again. Participants are asked to describe the image, report if they experience it from a field or observer perspective, and then rate the extent to which they experience the image as vivid, controllable, realistic, upsetting, making them feel like they want to leave, and

anxious on a 0-10 scale. Participants are also asked to report if they experience mental images when they are in social situations that make them feel anxious and how frequently using four categories (1 = Never, 2 = Sometimes, 3 = Often, 4 = Always). Wording was changed to make the interview schedule more appropriate for an adult population.

**Ethics.**

The study was granted full ethical approval from the University of Bath Ethics Committee (Appendix J).

**Sample size and power.**

An a priori power analysis using GPower indicated that 30 participants would be needed in each group to have 80% chance of finding a medium sized effect (0.65), as has been found in research with autistic children (Ozsivadjian et al., 2016).

**Data analysis.**

Data was analysed using IBM SPSS version 23. To check the reliability of the survey measures, data was checked for outliers and alphas below .70 were considered unacceptable (Field, 2018; Pallant, 2010). To identify group differences on survey measures, data was checked for outliers, normality, and homogeneity of variance, and t-tests were conducted. Outliers that were not due to error were retained and bootstrapping applied if necessary (Field, 2018, p.428). To identify group differences on demographic information and experience, and frequency, of imagery in social situations, chi-squared tests were conducted. Bonferroni correction was applied to adjust p-values for multiple tests to avoid Type 1 error and Fisher's Exact test was used when expected frequencies were less than 5 in more than 20% of cells. To identify the effect of group (LSA or HSA) and image condition (Relaxed Image 1, Social Situation Image, Relaxed Image 2) on image characteristics (Vividness, Controllability, Realism, Upsetting, Escape/Avoidance, Anxiety), a series of 2-way mixed ANOVAs were planned. Data was checked for outliers, normality, homogeneity of variance, and sphericity. The assumption of normality was violated which meant that multivariate analysis could not be used. Instead, multiple bootstrapped t-tests with Bonferroni correction were conducted to identify group differences and Friedman tests followed by Wilcoxon Signed Ranks tests were conducted to identify effects of image condition. To test whether taking an observer perspective or being distressed by imagery of a social situation added additional variance to social anxiety after controlling for generalised anxiety and fear of negative evaluation, a hierarchal linear regression was conducted. Data was checked for outliers, normality, linearity and multicollinearity, and bootstrapping applied. GAD-7 and BFNE scores were

included in Step 1, and Perspective and the Social Situation Image characteristics that were significantly correlated with SPIN scores were included in Step 2. To include the categorical predictor of Perspective, dummy variables were coded with 'Field' used as a baseline. The expected *R* value for random data in a regression with 7 predictors and a sample size of 62 was calculated as 0.11, which meant that the regression had sufficient power to reliably identify a medium effect size ($R^2$ = 0.13) (Field, 2018, p.390).

## Results

### Reliability of questionnaires.

Table 1 shows the questionnaire data for the study sample. The SPIN and BFNE both showed excellent internal consistency, and the GAD-7 and SUIS both showed good internal consistency. The AQ10 showed unacceptable internal consistency and removing items lead to a maximum improved alpha of .51. This scale was therefore excluded from further analysis.

Table 1

*Number of Items, Means, Standard Deviations, Ranges, 95% Confidence Interval (CI)s, and Cronbach's alphas (α) for each questionnaire for the Survey Sample (N = 324).*

| | Items | M (SD) | Range | 95% CI | α |
|---|---|---|---|---|---|
| SPIN | 17 | 39.69 (14.27) | 0-68 | [38.12, 41.31] | .91 |
| BFNE | 12 | 45.60 (11.58) | 12-60 | [44.46, 46.88] | .94 |
| GAD-7 | 7 | 13.44 (5.51) | 0-21 | [12.85, 14.07] | .88 |
| SUIS | 12 | 36.05 (11.32) | 12-60 | [34.83, 37.18] | .88 |
| AQ10 | 10 | 8.13 (1.60) | 2-10 | [7.97, 8.31] | .49 |

Note. SPIN = Social Phobia Inventory; BFNE = Brief Fear of Negative Evaluation Scale; GAD-7 = Generalised Anxiety Disorder 7; SUIS = Spontaneous Use of Imagery Scale; AQ10 = Autism Spectrum Quotient 10.

### Representativeness of the interview sample.

Fisher's exact tests showed that there were significantly different distributions between the groups in terms of Age, Gender, and Age at Diagnosis (Appendix K). Participants in the Interview Sample were significantly less like to be 18-24 years old, more likely to be 55-64 years old, more likely to self-identify as non-binary in gender, and less likely to have been diagnosed under the age of 18. There were no significant differences in Ethnicity, Education or Employment.

T-tests showed that the groups significantly differed on SPIN scores, with the Interview Sample scoring significantly lower, and did not significantly differ on BFNE, GAD-7 or SUIS scores (Table 2).

Table 2

*Means, Standard Deviations, T-tests, and 95% Confidence Intervals (CI) for the questionnaires for the Survey and Interview Sample*

| | Survey Sample (n = 262) | Interview Sample (n = 62) | | | |
|---|---|---|---|---|---|
| | Mean (SD) | Mean (SD) | t(322) | p | 95% CI |
| SPIN | 40.99 (14.00) | 34.18 (14.21) | 3.10 | .001 | [3.15, 10.81] |
| BFNE | 46.02 (11.61) | 43.81 (11.39) | 1.33 | .200 | [-.98, 5.08] |
| GAD-7 | 13.62 (5.49) | 12.68 (5.57) | 1.18 | .239 | [-.65, 2.55] |
| SUIS | 36.11 (11.30) | 35.76 (11.50) | 0.22 | .826 | [-2.88, 3.73] |

Note. SPIN = Social Phobia Inventory; BFNE = Brief Fear of Negative Evaluation Scale; GAD-7 = Generalised Anxiety Disorder 7; SUIS = Spontaneous Use of Imagery Scale

**HSA and LSA group differences.**

Fisher's exact tests showed no significant difference in distributions between the groups in terms of Age overall. There was a significant difference in distribution between the groups in terms of Education, specifically, that the proportion of participants who either finished education at GSCE level or chose to not disclose this information was higher in the HSA group, and the proportion of participants who had finished education at Doctoral level was higher in the LSA group. The was no significant difference in distribution between the groups in terms of Age at Diagnosis overall, although this did approach significance (Table 3).

Table 3

*Demographic data and Chi-Squared tests for the Low Socially Anxious (LSA) and High Socially Anxious (HSA) groups*

| | | LSA group (n = 31) | | HSA group (n = 31) | | | |
|---|---|---|---|---|---|---|---|
| Demographic | Category | N | % | n | % | $\chi^2$ | p |
| Age | 18-24 | 5 | 16.1 | 4 | 12.9 | 6.69 | .157 |
| | 25-34 | 14* | 45.2 | 6* | 19.4 | | |
| | 35-44 | 5* | 16.1 | 12* | 38.7 | | |
| | 45-54 | 4 | 12.9 | 4 | 12.9 | | |
| | 55-64 | 3 | 9.7 | 5 | 16.1 | | |
| Gender | Male | 8 | 25.8 | 11 | 35.5 | .80 | .773 |
| | Female | 19 | 61.3 | 16 | 51.6 | | |
| | Non-binary | 4 | 12.9 | 4 | 12.9 | | |
| Ethnicity | White/ Caucasian | 23 | 74.2 | 27 | 87.1 | .81 | .795 |
| | Asian | 2 | 6.5 | 1 | 3.2 | | |
| | Mixed-race | 1 | 3.2 | 1 | 3.2 | | |
| | Invalid | 5 | 16.1 | 2 | 6.5 | | |
| Education | GCSEs | 0* | 0.0 | 5* | 16.1 | 17.28 | .011 |
| | A-levels | 6 | 19.4 | 4 | 12.9 | | |
| | College | 4 | 12.9 | 1 | 3.2 | | |
| | Apprenticeship | 1 | 3.2 | 0 | 0.0 | | |
| | Diploma | 1 | 3.2 | 2 | 6.5 | | |
| | Bachelor's degree | 9 | 29.0 | 8 | 25.8 | | |
| | Master's degree | 5 | 16.1 | 7 | 22.6 | | |
| | Doctoral degree | 5* | 16.1 | 0* | 0.0 | | |
| | Other/ rather not say | 0* | 0.0 | 4* | 12.9 | | |
| Employment | Full time – paid | 11 | 35.5 | 7 | 22.6 | 7.35 | .380 |
| | Part time – paid | 4 | 12.9 | 9 | 29.0 | | |
| | Part time – voluntary | 1 | 3.2 | 2 | 6.5 | | |
| | Unemployed – looking | 2 | 6.5 | 0 | 0.0 | | |
| | Unemployed – not looking | 2 | 6.5 | 5 | 16.1 | | |
| | Retired | 1 | 3.2 | 0 | 0.0 | | |
| | Student | 2 | 6.5 | 2 | 6.5 | | |
| | Other/ Rather not say | 8 | 25.8 | 6 | 19.4 | | |
| Age at diagnosis | Under 18 years | 6* | 19.4 | 1* | 3.2 | 5.01 | .053 |
| | 18 years or older | 24* | 77.4 | 30* | 96.8 | | |
| | Not sure | 1 | 3.2 | 0 | 0.0 | | |

Note. * significant difference between the groups at $p < .05$ level

T-tests showed that the groups significantly differed on SPIN, BFNE and GAD-7 scores, but not on SUIS scores (Table 3).

Table 4

*Means, Standard Deviations, T-tests, and 95% Confidence Intervals (CI)s for the questionnaires in the Low Socially Anxious (LSA) and High Socially Anxious (HSA) groups*

| | LSA group (n = 31) | HSA group (n = 31) | | | |
|---|---|---|---|---|---|
| | Mean (SD) | Mean (SD) | t(60) | P | 95% CI |
| SPIN | 21.90 (5.69) | 46.45 (8.17) | -13.73 | <.001 | [-28.05, -20.89] |
| BFNE | 38.19 (10.20) | 49.42 (9.74) | -4.43 | <.001 | [-16.03, -6.07] |
| GAD-7 | 10.19 (5.12) | 15.16 (4.91) | -3.90 | <.001 | [-7.41, -2.43] |
| SUIS | 36.03 (10.82) | 35.48 (12.31) | .19 | .853 | [-5.62, 6.10] |

Note. SPIN = Social Phobia Inventory; BFNE = Brief Fear of Negative Evaluation Scale; GAD-7 = Generalised Anxiety Disorder 7; SUIS = Spontaneous Use of Imagery Scale

**Conduct of interviews.**

The interviews took an average time of 23 minutes. Two interviews were terminated because the participants were unable to create a mental image. Both the LSA and HSA groups reported higher anxiety ratings in the Social Situation Image in comparison to the first Relaxed Image (Table 6).

**Hypothesis 1: HSA autistic adults will report experiencing mental imagery in social situations more frequently than LSA autistic adults.**

Fisher's exact tests showed no significant difference between the groups in terms of experiencing mental imagery when anxious in a social situation, and a significant difference between the groups in terms of frequency (Table 5). Specifically, the proportion of HSA participants who reported experiencing mental imagery when they feel anxious in a social situation as 'Always' was higher than LSA participants (Figure 2).

Table 5

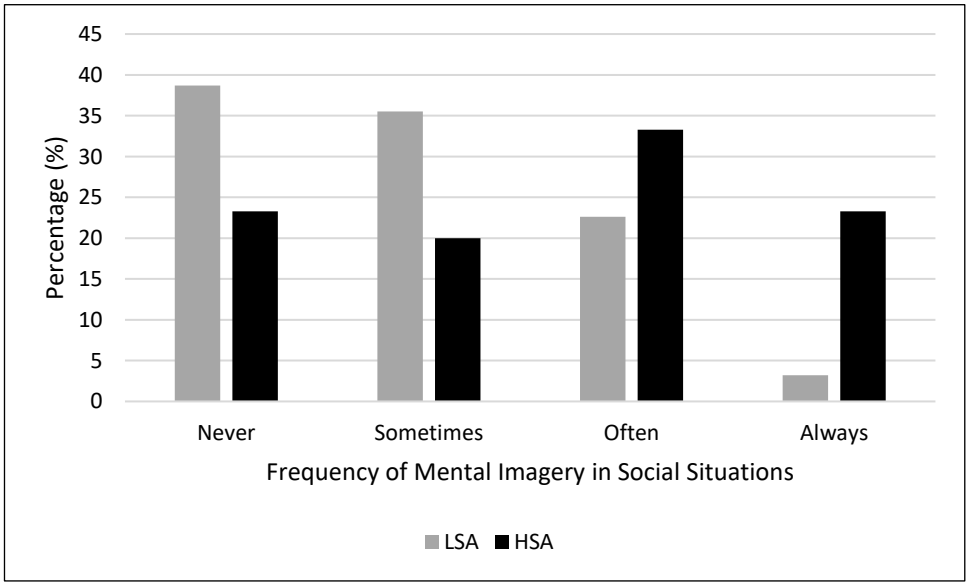
*Experience, Frequency, and Perspective of Mental Imagery for Low Socially Anxious (LSA) and High Socially Anxious (HSA) groups*

| | | | LSA group (n = 31) | | HSA group (n = 31) | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Freq. | % | Freq. | % | $\chi^2$ | p |
| Images in social situations | Experience of images in social situations | Yes | 18 | 58.1 | 21 | 67.7 | 1.89 | .426 |
| | | No | 13 | 41.9 | 9 | 29.0 | | |
| | | Not sure | 0 | 0.0 | 1 | 3.2 | | |
| | Frequency of images in social situations | Never | 12 | 38.7 | 7 | 23.3 | 7.63 | .050 |
| | | Sometimes | 11 | 35.5 | 6 | 20.0 | | |
| | | Often | 7 | 22.6 | 10 | 33.3 | | |
| | | Always | 1* | 3.2 | 7* | 23.3 | | |
| Relaxed Image 1 | Perspective | Field | 22 | 71.0 | 17 | 54.8 | 4.34 | .130 |
| | | Observer | 4 | 12.9 | 11 | 35.5 | | |
| | | Both | 5 | 16.1 | 3 | 9.7 | | |
| Social Situation Image | Perspective | Field | 23* | 74.2 | 11* | 35.5 | 12.24 | .002 |
| | | Observer | 3* | 9.7 | 15* | 48.4 | | |
| | | Both | 5 | 16.1 | 5 | 16.1 | | |
| Relaxed Image 2 | Perspective | Field | 22 | 71.0 | 19 | 61.3 | .72 | .740 |
| | | Observer | 6 | 19.4 | 8 | 25.8 | | |
| | | Both | 3 | 9.7 | 4 | 12.9 | | |

Note. *significant difference between the groups at p <.05

Figure 2

*Percentages of Frequency of Mental Imagery in Social Situations ratings for the Low Socially Anxious (LSA) and High Socially Anxious (HSA) groups*

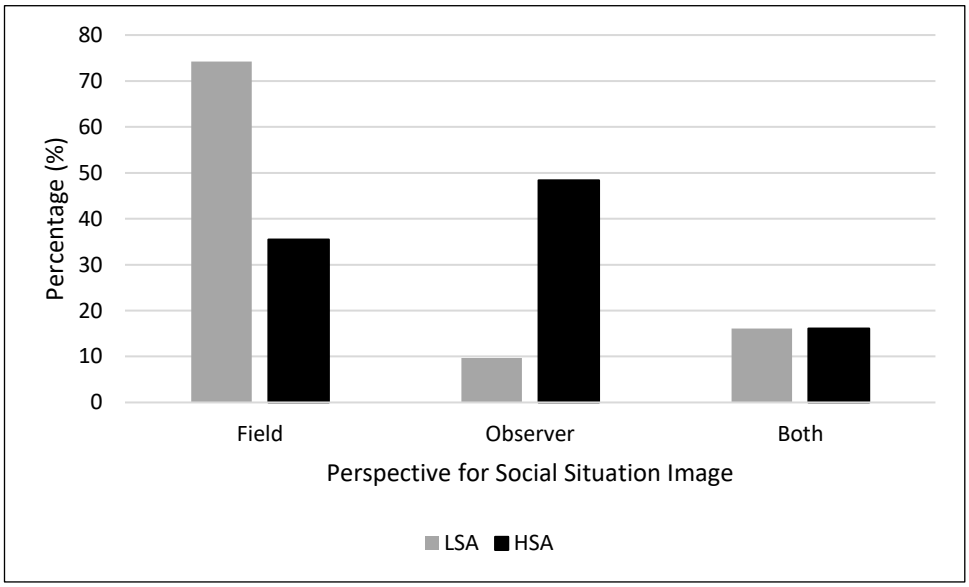


**Hypothesis 2: HSA, but not LSA, autistic adults will report experiencing mental imagery of a social situation from an observer as opposed to field perspective.**

Fisher's Exact Tests showed no significant differences between the LSA and HSA groups in terms of Perspective of mental imagery in either the First Relaxed Image or Second Relaxed Image condition, but a significant difference between the groups in the Social Situation Image condition (Table 5). Specifically, the proportion of participants who reported experiencing the Social Situation Image from a Field Perspective was higher in the LSA group and the proportion of participants who reported experiencing the Social Situation Image from an Observer Perspective was higher in the HSA group (Figure 3).

Figure 3

*Percentage ratings of Perspective of Mental Imagery of a Social Situation for the Low Socially Anxious (LSA) and High Socially Anxious (HSA) groups.*




**Hypothesis 3: HSA autistic adults will report experiencing mental imagery of a social situation as more distressing but not more vivid than LSA autistic adults.**

T-tests showed no significant differences between the LSA and HSA groups on any characteristic of mental imagery in any image condition (Table 6). There was a pattern that ratings for Upset, Escape/Avoidance and Anxiety were higher for the HSA group in the Social Situation Image condition, however, these were not significant.

Table 6

*Image characteristics Means, Standard Deviation, T-tests, and 95% Confidence Intervals (CI)s for the Low Socially Anxious (LSA) and High Socially Anxious (HSA) groups*

| | | LSA group (n = 31) | HSA group (n = 31) | | | |
|---|---|---|---|---|---|---|
| | | Mean (SD) | Mean (SD) | t(60) | P | 95% CI |
| Relaxed Image 1 | Vividness | 7.39 (2.08) | 7.26 (2.49) | .22 | .825 | [-.98, 1.32] |
| | Control | 7.53 (2.45) | 6.45 (3.33) | 1.46 | .149 | [-.35, 2.49] |
| | Realism | 5.68 (2.81) | 6.18 (3.02) | -.68 | .502 | [-2.03, 1.04 |
| | Upset | .36 (.75) | .26 (.73) | - .15 | .609 | [-.29, .49] |
| | Escape | 1.18 (1.51) | 1.08 (1.67) | .24 | .812 | [-.66, .80] |
| | Anxiety | 1.23 (1.76) | 1.16 (1.68) | .15 | .883 | [-.74, .92] |
| Social Situation Image | Vividness | 7.55 (1.96) | 7.61 (2.03) | -.13 | .900 | [-1.04, .90] |
| | Control | 4.52 (2.98) | 3.61 (2.77) | 1.24 | .221 | [-.44, 2.27] |
| | Realism | 6.21 (2.84) | 6.47 (2.94) | -.35 | .726 | [-1.61, 1.12] |
| | Upset | 5.71 (2.46) | 6.77 (2.40) | -1.72 | .090 | [-2.20, .10] |
| | Escape | 6.60 (2.74) | 7.84 (2.43) | -1.89 | .064 | [-2.56, .04] |
| | Anxiety | 6.76 (2.33) | 7.86 (1.91) | -2.03 | .047 | [-2.22, .05] |
| Relaxed Image 2 | Vividness | 7.66 (2.26) | 7.74 (2.52) | -.13 | .895 | [-1.19, .94] |
| | Control | 6.61 (2.54) | 6.39 (3.01) | .32 | .751 | [-1.05, 1.47] |
| | Realism | 6.58 (2.52) | 7.08 (2.98) | -.71 | .478 | [-1.80, .72] |
| | Upset | .34 (.81) | .26 (.86) | .38 | .704 | [-.37, .50] |
| | Escape | .92 (1.45) | .97 (1.92) | -.11 | .911 | [-.88, .77] |
| | Anxiety | 1.00 (1.37) | 1.30 (2.05) | -.68 | .501 | [-1.15, .49] |

Note. Bonferroni correction was applied for each image condition so significance level = p <.008

Table 7 shows the ratings of image characteristics for the combined Interview Sample for each image condition. Friedman tests showed that there was a significant effect of image condition for ratings of Upset, Escape/Avoidance, Anxiety and Controllability. Post-hoc Wilcoxon Signed Rank tests showed that Upset, Escape/Avoidance, and Anxiety were rated higher in the Social Anxiety Image condition in comparison to Relaxed Image 1 (z = -6.75, -6.78, and -6.79, respectively) (p < .001), and lower in Relaxed Image 2 in comparison to the Social Anxiety Image (z = -6.75, -6.75, and -6.80, respectively (p < .001). Controllability was rated lower in the Social Anxiety Image in comparison to Relaxed Image 1 (z = -5.05, p <.001), and higher in Relaxed Image 2 in comparison to the Social Anxiety Image (z = -4.54, p <.001).

Table 7

*Image characteristics for the three image conditions for the whole sample (n = 62), Friedman tests and Wilcoxon signed ranks tests*

| | Relaxed Image 1 | Social Anxiety Image | Relaxed Image 2 | $\chi^2$ | p |
|---|---|---|---|---|---|
| Vividness | 7.32 (2.27) | 7.58 (1.99) | 7.70 (2.37) | 2.16 | .340 |
| Control | 6.99 (2.95) | 4.07 (2.89) | 6.50 (2.76) | 35.49 | .000 |
| Realism | 5.93 (2.90) | 6.34 (2.87) | 6.83 (2.75) | 7.72 | .021 |
| Upset | .31 (.74) | 6.24 (2.47) | .30 (.83) | 113.68 | .000 |
| Escape | 1.13 (1.58) | 7.22 (2.65) | .94 (1.69) | 90.70 | .000 |
| Anxiety | 1.19 (1.71) | 7.31 (2.18) | 1.15 (1.73) | 101.27 | .000 |

Note. Bonferroni correction was applied so significance level = p <.008

**Hypothesis 4: Experiencing observer-perspective and distressing mental images of a social situation will significantly predict social anxiety scores after generalised anxiety and fear of negative evaluation are controlled for.**

The GAD-7 and BFNE were both significantly correlated with SPIN scores, as were ratings of Upsetting, Escape/Avoidance, and Anxiety (Table 8).

Table 8

*Correlation Matrix*

| Measure | *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* | *9* |
|---|---|---|---|---|---|---|---|---|---|
| SPIN | - | | | | | | | | |
| . GAD-7 | .49*** | - | | | | | | | |
| . BFNE | .56*** | .40** | - | | | | | | |
| . SUIS | .08 | .10 | -.09 | - | | | | | |
| . Vividness | .07 | .17 | .11 | .56*** | - | | | | |
| . Controllability | -.18 | -.24 | -.16 | -.07 | .15 | - | | | |
| . Realism | .05 | .11 | -.03 | .64*** | .62*** | .12 | - | | |
| . Upsetting | .30* | .33* | .07 | .49*** | .31* | -.05 | .58*** | - | |
| . Escape | .34** | .15 | .05 | .25* | .17 | -.20 | .20 | .58*** | - |
| . Anxiety | .37** | .39** | .14 | .32* | .30* | .08 | .34** | .71*** | .54*** |

Note. SPIN = Social Phobia Inventory, GAD-7 = Generalised Anxiety Disorder 7, BFNE = Brief Fear of Negative Evaluation scale, SUIS = Spontaneous Use of Imagery Scale, *p <.05, **p <.01, ***p <.001

Table 9 shows the outcome of the hierarchal linear regression. In Model 1, GAD-7 and BFNE scores were both significant predictors, and the model accounted for 40% of the total variance in SPIN scores. In Model 2, BFNE, Observer Perspective, and Escape were all significant predictors, and the model accounted for 53% of the total variance in SPIN scores. GAD-7 scores were no longer a significant predictor in Model 2. The 13% increase in variance between Models 1 and 2 was statistically significant.

Table 9

*Hierarchal regression predicting Social Phobia Inventory (SPIN) scores with 95% Confidence Intervals (CI) for the Interview Sample (n = 62)*

| | SPIN scores | | | |
|---|---|---|---|---|
| | Model 1 | | Model 2 | |
| Variable | *B* | 95% CI | *B* | 95% CI |
| GAD-7 | .80** | [.25, 1.38] | .56 | [-.04, 1.18] |
| BFNE | .54** | [.25, .85] | .55** | [.25, .81] |
| Observer Perspective | | | 6.94* | [.30, 13.96] |
| Switching Perspective | | | -1.02 | [-8.03, 6.98] |
| Upsetting | | | -.57 | [-2.42, 1.26] |
| Escape | | | 1.69** | [.27, 2.85] |
| Anxiety | | | .48 | [-1.06, 2.41] |
| $R^2$ | .40 | | .53 | |
| *F* | 19.46*** | | 8.53*** | |
| $R^2$ change | | | .13 | |
| *F* change | | | 2.91* | |

Note. *p = .05. **p < .01, ***p < .001

**Post-hoc analysis**

Due to the significant difference between the LSA and HSA groups in terms of Education, post-hoc chi-squared tests were conducted to investigate whether participants who had completed School/College Level Education (GCSE's, A-Levels, College, Diploma, Apprenticeship) and participants who had completed Higher Education (Bachelor's Degree, Master's Degree, Doctoral Degree) differed in their ratings of mental imagery. The results showed no significant differences in terms of whether participants reported experiencing imagery in social situations ($\chi^2(1) = .02$, $p = 1.00$), frequency of imagery in social situations ($\chi^2(3) = 1.87$, $p = .638$), and perspective of imagery in social situations ($\chi^2(2) = .65$, $p = .768$).

## Discussion

This study aimed to test the proposal that SAD is partly maintained by observer perspective negative self-images (Clark & Wells, 1995) with a population of autistic adults. The hypothesis that HSA participants would report experiencing mental imagery in social situations more frequently than LSA participants was supported, however, this study found that HSA and LSA participants did not differ in terms of whether they reported experiencing any mental imagery in social situations. This does not fit with previous research with typically developing adults which found that social phobia patients were more likely to report experiencing images when anxious in social situation in comparison to non-patient controls (Hackmann et al., 1998), however, does fit with previous research with autistic children (Ozsivadjian et al., 2016). The hypothesis that HSA, but not LSA participants would report experiencing mental imagery of a social situation from an observer, as opposed to field, perspective was also supported, which fits with previous research with typically developing adults (Wells et al., 1998). There were no significant differences between the LSA and HSA groups on characteristics of social situation imagery when controlling for inflated type 1 error, however, there was a trend of higher negative ratings in the HSA group. This does not fit with previous research (Ozsivadjian et al., 2016), however, it is possible that this is an artefact of using a higher SPIN cut-off to make the LSA and HSA groups, which seems plausible given that negative ratings were all significantly correlated with SPIN scores. Lastly, it was found that experiencing imagery of a social situation from an observer perspective and experiencing an urge to escape or avoid the image, accounted for significant variance in SPIN scores when generalised anxiety and fear of negative evaluation were controlled for, and that only fear of negative evaluation, and not generalised anxiety, remained significant in the second model.

These findings support the Bellini (2006) developmental model of social anxiety because although generalised anxiety and fear of negative evaluation accounted for a large proportion of SPIN scores in this sample, generalised anxiety no longer accounted for significant variance after additional cognitive factors were been included, which are perhaps shaped by life experiences e.g. memories of previous social encounters. The findings also support the Clark and Wells (Clark & Wells, 1995) model of social phobia by demonstrating that when autistic people are asked to imagine a social situation in which they feel anxious, those who score higher on a measure of social anxiety tend to adopt an observer-perspective, and experience these images as more distressing than autistic people who score lower on a measure of social anxiety. This is in line with cognitive-

behavioural theory, which proposes that such images maintain social anxiety because they raise state anxiety and inspire avoidance of the imaged negative social experience.

**Strengths and limitations.**

This is the first study to have investigated the role of mental imagery in social anxiety in the context of autism. The study also benefited from the involvement of two autistic people in designing and piloting the methodology. It was not possible to check that participants had a formal diagnosis of autism, which means that there is a possibility that this criterion was not met in some cases, and the unacceptable validity of the AQ-10 meant that this could not be used as a control measure. The high SPIN scores in the sample meant that the recommended clinical cut-off for the SPIN could not be used, which means that the results cannot be interpreted as related to SAD but to social anxiety as a continuum. The lack of typically developing comparison groups means that the finding that both the LSA and HSA groups reported experience at least some mental imagery in social situations cannot be reliably interpreted as suggesting a vulnerability factor. In terms of generalisability, it needs to be taken into consideration that the interview sample were more likely to be older, identify as non-binary in gender, and to have been diagnosed after the age of 18 in comparison to the survey sample. It is also important to consider why the SPIN and BFNE scores were so high when previous research has found the rate of SAD to be 50% (Maddox & White, 2015). One explanation is that previous research involved telephone screening prior to data collection, which may have stopped some individuals with SAD participating. This would suggest that the data collected in this study could be more representative of an autistic population, and that rates of SAD are higher than previously thought. Another explanation is that the current study was advertised as investigating mental imagery and social confidence, and therefore may have attracted individuals with an interest in social anxiety.

**Clinical implications.**

The findings suggest that CBT for SAD with autistic people should include assessment of mental imagery in social situations. It is possible that clients may have a distorted view of themselves in social situations and would therefore benefit from NICE recommended video feedback. It is also possible that mental images may be related to a negative social experience in the past and would therefore benefit from exploring these origins and imagery rescripting work. It is of note that the interview participants were given a very clear description of what was meant by the term ‘mental imagery’ and given a concrete example if needed. It is also of note that some participants initially answered ‘No’ to the question “When you are in a social situation which makes you feel anxious, do you ever

experience any mental images?" but then rated a frequency of 'Sometimes' and changed their answer to 'Yes' before providing an example. Taken together, this suggests that it may be necessary for clinicians to take time when exploring mental imagery with autistic clients and provide scaffolding around such conversations.

**Future directions.**

Future research should include typically developing comparison groups and further investigate the hypothesis that higher trait experience of anxious mental imagery may be a specific vulnerability factor for autistic people. For example, research could compare autistic and typically developing samples using the SUIS and test the hypothesis that higher trait use of imagery is related to increased rates of anxiety disorders in autistic, but not typically developing samples. The findings do not support the hypothesis that imagery work is too complex or not necessary for autistic people with SAD (Spain et al., 2017), however, research is now needed to explore the clinical utility of including imagery work in treatment, which could have implications beyond social anxiety. Recommendations for adapted CBT for autistic people emphasise behavioural rather than cognitive change methods, however, if mental imagery can be subject to rescripting, it may prove to be a useful tool for change at the cognitive level via visual as opposed to verbal means. It would also be interesting to investigate the feasibility and effectiveness of video feedback for autistic people as it is possible that this very concrete approach could prove beneficial. Research should also continue to explore the prevalence of co-occurring SAD and autism in the general population, perhaps by repeating the online survey methodology without explicit reference to social anxiety. Although post-hoc analysis showed that educational attainment was not related to the experience of mental imagery in this sample, it is still important to highlight that the LSA participants in this sample tended to be more highly educated. Previous epidemiological research has found that a lifetime diagnosis of social phobia was associated with leaving school early (Stein & Kean, 2000) and a retrospective study of adults with anxiety disorders found that a diagnosis of social phobia was associated with not completing the desired level of education (Ameringen, Mancini, & Farvolden, 2003). Prospective research has also shown that adolescents with anxiety disorders are less likely to enter university compared to non-anxious peers (Woodward & Fergusson, 2001). Although the current sample is small and data on desired educational attainment was not collected, the results suggest that social anxiety may impact how far autistic people progress in education and further research is needed to explore this relationship and the potential need for targeted intervention. Finally, the current study greatly benefitted from the help of autistic people, and future research should continue to harness this expertise.

## Conclusion

The findings suggest that higher levels of social anxiety are associated with taking an observer perspective when thinking about a social situation and feeling distressed by such images, and that such experiences can predict social anxiety independent of generalised anxiety and fear of negative evaluation. This suggests that imagery work may be a useful addition to adapted CBT for autistic people presenting with SAD, however, more research is needed to replicate and confirm these findings before beginning to evaluate the clinical utility of imagery work with this population.

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## Executive Summary

### Investigating the Relationship between Social Anxiety and Mental Imagery in Autistic Adults[2]

**Why the study was conducted.**

Social Anxiety Disorder is a disabling condition that is characterised by a severe and persistent fear of social or performance situations. Research has found that 50% of autistic adults also meet diagnostic criteria for Social Anxiety Disorder.

Mental imagery (seeing pictures in your mind) has been shown to be related to Social Anxiety Disorder in the general population. Research has shown that people with clinical levels of social anxiety are more likely to report experiencing negative mental imagery of themselves in social situations. Working on these images is an important component of Cognitive Behaviour Therapy (CBT) for Social Anxiety Disorder.

It is currently unknown whether autistic people also experience negative mental imagery of themselves in social situations, and if this is related to social anxiety.

**Hypotheses.**

1) Highly Socially Anxious (HSA) autistic adults will report experiencing mental imagery in social situations more frequently than Low Socially Anxious (LSA) autistic adults
2) HSA, but not LSA, autistic adults will report experiencing mental imagery of a social situation from an observer as opposed to field perspective
3) HSA autistic adults will report experiencing mental imagery of a social situation as more distressing but not more vivid than LSA autistic adults
4) Experiencing observer-perspective and distressing mental images of a social situation will significantly predict social anxiety scores

[2] The term 'autistic adults' will be used throughout the paper instead of the term 'people with Autism Spectrum Disorder (ASD)'. This is because of recent research showing that this terminology is preferred by the autism community (Kenny et al., 2016).

**What the study involved.**

Between July 2017 and February 2018, 324 autistic adults took part in an online survey, completing standardised measures of anxiety, social anxiety, use of imagery, and a demographic questionnaire. 31 participants scoring above a specified cut-off on a measure of social anxiety and 31 participants scoring below then participated in a telephone interview about mental imagery in social situations.

**What the study found.**

The study found that most participants in both groups reported experiencing mental imagery in social situations, however the participants in the high social anxiety group reported experiencing this more frequently.

Participants in the high social anxiety group were also more likely to report experiencing mental imagery of a social situation in which they feel anxious as if they were looking at themselves (from an 'observer perspective') as opposed to as if they were looking outwards (from a 'field perspective').

There were no group differences in terms of what ratings participants gave the image of a social situation image in terms of vividness, controllability, realism, how upsetting it was, how much they wanted to leave the image, or how anxious it made them feel.

Seeing imagery of a social situation from an observer perspective, and ratings of wanting to leave the image added additional variance to social anxiety scores when other important variables were controlled for in the analysis.

**What the strengths and limitations of the study were.**

This is the first study to have investigated the role of mental imagery in social anxiety for autistic people. The study also benefited from the involvement of two autistic people in designing and piloting the methodology. The study had several limitations which may have impacted the findings. Firstly, diagnosis was confirmed by self-disclosure and was not cross-checked. Secondly, the high social anxiety scores in the sample meant that the recommended clinical cut-off could not be used, which means that the results cannot be interpreted as related to Social Anxiety Disorder but to social anxiety as a continuum. Thirdly, the lack of typically developing comparison groups means that the finding that both groups reported experience at least some mental imagery in social situations cannot be reliably interpreted as suggesting a vulnerability factor.

**Clinical implications.**

The findings suggest that Cognitive Behaviour Therapy (CBT) for Social Anxiety Disorder with autistic people should at least include an assessment of mental imagery in social situations. Further research is needed to explore whether imagery work can be a useful intervention for autistic people experiencing clinical levels of social anxiety.

## Connecting Narrative

When I began my training, I had a good idea of what research areas interested me. My work experiences to date had sparked interests in Child and Adolescent Mental Health, attitudes towards personality disorder, and adapting CBT for autistic people. I was excited to have the opportunity to conduct doctorate level research, however, my lack of research skills meant that it felt difficult knowing where to start.

### Critical Literature Review

#### Idea development.

I met my clinical tutor at the time, Professor Paul Salkovskis, and expressed my interest in investigating whether training aimed at improving professional attitudes towards people with a diagnosis of personality disorder is more effective when it is co-delivered by People with Personal Experience (PPE). I thought that this could be either a Service Improvement Project (SIP) or Main Research Project (MRP), however, Paul was helpful in explaining that I would need a very large sample size which might not be feasible. I felt a little disappointed, however, decided to take on the advice and think of a different project. Dr Megan Wilkinson-Tough had co-delivered some teaching on personality disorder with PPE, so I approached her to discuss ideas. Megan and I agreed that in terms of my interest, it seemed that the next most useful step for the evidence base would be to conduct a systemic literature review synthesising all the available research evaluating training aimed at improving staff attitudes towards people with a diagnosis of personality disorder. I was keen to conduct a project in the area and felt that I had struck up a good working relationship with Megan and valued her clinical and research experience. I had also met with Dr Sinead Lambé to discuss projects regarding personality disorder after she presented at the December Research Fair. Though it is unusual to have an external supervisor for the Critical Literature Review, Sinead also had experience of two published systematic reviews and was currently working within teams with people with a personality disorder diagnosis, so I was keen to have her involved too.

#### Process and learning.

I found the literature review the hardest out of all three projects because I often felt overwhelmed by all the information and couldn't see how it would all come together. Both Megan and Sinead were a great help throughout. It was good to talk through some of my questions and concerns, and I found that both provided constructive feedback and advice which helped me to learn and feel OK with not getting things 'right' first time. Once I had

my results, I found it difficult to synthesise the data, I felt compelled to include every bit of information and on more than one occasion had feedback that I was repeating the results rather than moving on to what Megan referred to as 'higher level synthesis'. Sinead also encouraged me to be more confident with my conclusions, and I feel that both these points are linked because things began to feel easier when I focused on relating my findings to theory and practice and freed myself of the expectation that I should include everything. I feel that I have learnt the process and writing style that is required for a systematic review and would feel able to conduct another. If I were to do my project again, I would have further refined my research question and perhaps omitted some of the very poor-quality papers, however, I feel that I have learnt a lot as a researcher from the broad approach that I took.

**Contribution to research clinical practice.**

I intend to submit this paper for publication and feel that it will be useful for service providers wishing to develop training aimed at improving professional attitudes towards people with a diagnosis of personality disorder. I also feel that it provides valuable evidence that sharing a psychological framework for understanding what life experiences might lead someone to acquire a diagnosis of personality disorder and including PPE in delivering training may be particularly helpful in improving professional attitudes. That said, I also strongly feel that there are wider issues around whether professionals are adequately supported in their work, and whether the diagnostic term itself is still appropriate given the stigma that it can provoke which also deserve further research attention.

**Service Improvement Project**

**Idea development.**

When I was looking for a service improvement project, my main priority was that I wanted it to come from a service and be client facing. I had experience of developing a peer support initiative with service users following a survey I conducted in my previous role, and this had taught me the importance of having a team engaged in service level research and the value of having service users engaged in service development. I also knew that I wanted to leave training with a solid grounding in qualitative research skills and, due to the requirement that our main research project to be at least in part quantitative, identified that I would conduct a qualitative SIP. I was keen to gain experience in either Interpretative Phenomenological Analysis or Grounded Theory. I was drawn to these two approaches because they are bottom-up, and I liked how this allowed for the discovery of new ideas

and theories from service users themselves rather than being constrained by pre-existing theory. I had an idea to return to my previous team and conduct a project exploring barriers to engagement, however, I realised that this would likely bias the research because I would have been interviewing many of the young people who I had supported during their initial engagement with the service. I had noticed that several SIPs had been advertised via email and decided to watch and wait to see if any of interest came up. I had a pre-training interest in working in Child and Adolescent Mental Health Services (CAMHS) and was instantly attracted to the project evaluating a parenting intervention for adolescents misusing substances.

**Process and learning.**

I met with the substance misuse workers responsible for developing the intervention and was struck by their initiative and passion for the project, and I felt inspired to join them in further developing their intervention. The team itself has no psychology input, but Dr Libby Rogers from a local CAMHS team was on board to be an external supervisor and provided invaluable guidance in terms of helping me reflect on what the findings implied for practice. I was also lucky to have Dr Catherine Butler as my internal supervisor, who provided expert supervision in IPA and encouraged me to submit the paper for publication. I decided to not fully research the intervention prior to the interview and analysis as I thought this might bias the process. Whilst I'm glad I did this, it did at times leave me feeling anxious that I didn't know where I was heading. I can remember feeling overwhelmed by information once again, this time in the form of eight hours of transcribed interviews. Again, I feel that over time the process became clearer to me, and I became more confident to make decisions without fear of getting it 'wrong'. My project also included some quantitative measures, which were already set out by the service. When I was writing up, I realised that most of these were unvalidated, which weakened the study, and this taught me the importance of selecting validated outcome measures. If I were to do this project again, I would have researched the measures and then aimed to discuss why it might be important to use alternative or additional measures with the service.

**Contribution to research and clinical practice.**

Several recommendations were made to the service based on the findings. These included pre-screening participants for trauma, signposting to appropriate services, and reflecting on the process of recruiting support outside of the programme. I fed back the findings to the service during a team meeting and presented the preliminary findings at the 2017 AWP CAMHS Research Conference which means that I feel I have been fully involved in all stages of the project. I am pleased that my paper is under review for

publication in the Journal of Family Therapy and that one of my findings that some participants reported finding it difficult to recruit supporters outside of the programme is something that a current trainee is going to be exploring further. It makes me feel that I have made a genuine contribution to the evidence base and I am really pleased to have helped the service get their hard work out there.

**Main Research Project**

**Idea development.**

I had been interested in adapting Cognitive Behavioural Therapy (CBT) for autistic people since working with some clients in my job pre-training. I had been struck by how in one case, CBT had been very effective in helping a young person overcome intrusive thoughts, however, had taken considerable time and trial and error. I met with Dr Ailsa Russell to discuss projects and was initially considering a literature review, however, over time my interests elsewhere were shaping up into a literature review, as already discussed. I was inspired by Ailsa's enthusiasm for the work that she and previous trainees have conducted into exploring social anxiety in autistic people and after reading these projects decided that I wanted to help continue the work. It was Professor David Clark who turned my attention towards mental imagery after I mentioned that I was looking at his model with autistic people when he came to teach us. I was excited when Ailsa highlighted that the first study known to her looking at the relationship between mental imagery and anxiety in autism had just been conducted. I was also very lucky that Dr Ann Ozsividjian was happy to send me her accepted manuscript and allowed me to use and adapt her imagery interview measure.

**Process and learning.**

As someone who was not confident as a researcher pre-training, I liked the idea of taking an established CBT model, which I already had some experience of, and testing its applicability to a new population because I felt that this would provide a firm context to focus on building my core research skills. I was also keen to engage with participants in a testing situation because I wanted to get to know my study population, so the semi-structured imagery interview felt like a good fit. Due to the need to participants scoring both low and high in social anxiety, Ailsa and I discussed that online recruitment would be likely to be more successful than via NHS services. It was at the Project Approval Session (PAS) that a telephone methodology was suggested. Ailsa and I spent time thinking about how the interview would need to be structured to be adaptable. I also recruited two autistic people who provided invaluable support in helping me understand how to set out the

online survey in the most accessible way possible, for example, by making the response options consistent across questionnaires where possible and providing concrete instructions. I was pleased that both fed back that the imagery interview made sense, and this encouraged me to go ahead with the proposed interview methodology. After the project began recruiting, there were several challenges. Firstly, although the response to the research was largely positive, I encountered some objections to the research, in particular the use of a telephone methodology, on social media. I initially found defending my methodology anxiety provoking, however, through responding developed confidence in my design. I responded to every comment with thanks, an explanation of why the research was designed as it was, and an invitation to ask more questions. I hope that these people felt valued and encouraged to continue engaging with research. Secondly, it quickly became apparent that the social anxiety scores in our sample would make it unfeasible to use the intended clinical cut-off to make groups. I was grateful to Ailsa for helping me find an alternative and justifiable, cut off, however, his taught me the importance of researching what range of scores you expect and developing a contingency plan. Thirdly, 62 interviews took up a lot of time. I was often conducting interviews in the evening to fit around participants' schedules, which made it difficult to maintain a healthy work-life balance. However, without this commitment I do not think I would not have been able to obtain my planned sample size.

**Contribution to research and clinical practice.**

I feel proud that I have been able to demonstrate that a telephone methodology which could perhaps be considered too complex or inappropriate for an autistic population can be applied. I am also pleased that I have added to an emerging evidence base regarding mental imagery and anxiety in autism, because I truly believe that this research area could lead to important clinical developments. Lastly, whilst I did collect qualitative information about imagery in the interview, this was unfortunately outside the scope of my MRP write up. Ailsa and I are planning to write this up as a second paper soon, which I hope will further contribute to the emerging evidence base.

## Case Studies

Over the course of training I feel that my ability to produce single case reports has improved significantly. Something that I struggled with initially was the continuous outcome measurement required for a Single Case Experimental Design (SCED). The complexity of cases on my Working Age Adult and Older Adult placements meant that the focus of the intervention would usually not be clear until after some therapeutic

engagement had begun. That said, in my first year I developed a good understanding of the structure and content of a clinical case study in general. I was particularly pleased with my Older Adult case study because I had delivered a CBT intervention in a somewhat novel context. I also felt that I had made good use of my learning about structure and content from the previous case study feedback and that this report was a vast improvement. I presented this case study as a poster at the 2017 BABCP Conference and was shocked and delighted when I heard that I had been awarded the Best Poster prize. This confirmed for me that I was beginning to develop my skills in producing valuable single case studies. In my third placement, I prioritised continuous outcome measurement and learning how to conduct a SCED. I feel that over my second year I began to consolidate my skills, and writing case reports began to feel familiar. For my final case study in my third year, I felt comfortable with setting up continuous outcome measurement from the start, however, I again found it difficult to conduct a SCED with a stable baseline and this is a skill that I intend to continue to try and develop post-training. I have found the process of writing case studies incredibly helpful as a clinician. It has brought into sharp focus the importance of understanding the evidence base for an intervention, understanding the psychometrics of the outcome measures that I select, and reflecting on the outcomes of the interventions that I deliver with reference to the wider literature.

**Summary**

Throughout my training, I have prioritised the research skills that I wanted to obtain over being wedded to particular ideas. I feel that this have given me an anchor at times when I have felt unsure about the direction of my projects. It has also left me feeling satisfied that I have made good use of the opportunity. I also feel incredibly lucky that I have had excellent supervision and support for all three of my projects. I also feel that they all make a valuable contribution to the evidence base. I have had experiences of feeling overwhelmed by data and lacking in confidence in my ability to manage this for all my projects, however, I have learnt that things did always get clearer over time. I feel that this is a good general learning point to take forward because it is likely that I will have similar feelings when I take on new challenges in research in the future. I also feel that I have demonstrated a commitment to involving PPE in research and service development in all my projects and am looking forward to continuing this in future projects. Another general learning point for me has been the importance of taking the time to research which measures I use and the quality of the data they will collect. I feel that the time pressure and complexity of designing three projects simultaneously made this difficult in training, however, I also feel that I was not fully alert to this before. In my future, I see myself

conducting service based research with a high level of PPE involvement. I hope that the skills and knowledge that I have experienced will allow me to do this in a way that is of a publishable standard. I envisage that I will attend training to refresh my knowledge or learn new techniques as needed. I am also very keen to supervise future trainees in conducting research projects.

## Acknowledgements

I would like to take this opportunity to thank everyone who has supported me throughout the Doctorate in Clinical Psychology.

**Research**

I would like to thank my internal supervisors Dr Megan Wilkinson-Tough, Dr Catherine Butler, and Dr Ailsa Russell, and my external supervisors Dr Sinead Lambé and Dr Libby Rogers, for their guidance and encouragement. I am also very grateful to Mark Batterham, Ramon Wilson, and Luke Cousins for supporting me with my Service Improvement Project.

I would also like to thank the People with Personal Experience who helped me develop my interview measures and pilot the methodology for my Service Improvement Project and Main Research Project. I am also incredibly grateful to all my research participants for giving up their time and sharing their experiences with me.

I would also like to thank to Monica Cristiana-Hess from the Mathematic Resource Centre (MASH) for her help with statistics.

**Placement**

I am very grateful to all my placement supervisors for their support and guidance over the last three years. Particular thanks go to Dr Jane Spurr, for helping me learn to recognise my 'inner critic' and need for self-care, Dr Kate Perry, for believing in me and helping me recognise some of my strengths, Eddy Draper, for helping me develop the confidence to prioritise and assert myself, and Dr Louise Clarke, for helping me develop my CBT skills and instilling a mantra of 'relentless self-care'.

I am also thankful to the wonderful teams that I have been lucky enough to join over the last three years for making me feel so welcome and sharing their knowledge and experience.

I am also very grateful to everyone who I have worked with clinically over the last three years. I wish to thank them for sharing their life experiences with me and for what each person has taught me about myself as a professional and as a person. To those who have consented to me writing up the work that we did together as a case study, I would like to thank them for their generosity and for instilling this trust in me.

**University**

I would like to thank Professor Paul Salkovskis for his support and guidance as my Clinical Tutor until recently. I would also like to thank Dr Catherine Butler for taking me on as tutee for these last few months. I am very grateful to all the departmental staff for their hard work, and to the admin staff who work so hard to ensure that the programme runs as smoothly as possible for trainees.

**Family and Friends**

I would like to thank my friends for believing in me at times when I didn't believe in myself. I would not have been able to have done it without them. I would also like to thank my sister Lisanne and brother-in-law Tom for always asking how things were going and telling me that they were proud. Special thanks go to my nephew Thomas, who's face on my phone screensaver made me smile in some tense moments. I would also like to thank my cohort for co-creating a safe and supportive space in which I felt able to grow as a clinical psychologist.

Thank you all.

## Appendices

### Appendix A – CLR: Clinical Psychology Review Author Guidelines

Manuscripts should be prepared according to the guidelines set forth in the Publication Manual of the American Psychological Association (6th ed., 2009). Of note, section headings should not be numbered.

Manuscripts should ordinarily not exceed 50 pages, including references and tabular material. Exceptions may be made with prior approval of the Editor in Chief. Manuscript length can often be managed through the judicious use of appendices. In general the References section should be limited to citations actually discussed in the text. References to articles solely included in meta-analyses should be included in an appendix, which will appear in the on line version of the paper but not in the print copy. Similarly, extensive Tables describing study characteristics, containing material published elsewhere, or presenting formulas and other technical material should also be included in an appendix. Authors can direct readers to the appendices in appropriate places in the text.

It is authors' responsibility to ensure their reviews are comprehensive and as up to date as possible (at least through the prior calendar year) so the data are still current at the time of publication. Authors are referred to the PRISMA Guidelines (http://www.prisma-statement.org/statement.htm) for guidance in conducting reviews and preparing manuscripts. Adherence to the Guidelines is not required, but is recommended to enhance quality of submissions and impact of published papers on the field.

*Appendices*
If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

Abstract
A concise and factual abstract is required (not exceeding 200 words). This should be typed on a separate page following the title page. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separate from the article, so it must be able to stand alone. References should therefore be avoided, but if essential, they must be cited in full, without reference to the reference list.

*Highlights*
Highlights are mandatory for this journal. They consist of a short collection of bullet points that convey the core findings of the article and should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point). You can view example Highlights on our information site.

*Keywords*
Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes

**Appendix B – CLR: Search Terms by Database**

**PsychINFO – 442 articles**
Any Field: "clinician*" OR Any Field: "health personnel" OR Any Field: "staff" OR Any Field: "professional*" OR Any Field: "nurs*" OR Any Field: "doctor*" OR Any Field: "psychologist*" OR Any Field: "worker*" OR Any Field: "psychiatrist*" AND Any Field: "training" OR Any Field: "teaching" OR Any Field: "education*" OR Any Field: "psychoeducation*" OR Any Field: "psycho-education*" OR Any Field: "educational program*" OR Any Field: "workshop*" AND Any Field: "personality disorder*" AND Any Field: "attitud*" OR Any Field: "empath*" OR Any Field: "sympath*" OR Any Field: "compassion*" OR Any Field: "optimis*" OR Any Field: "hopeful*" OR Any Field: "confiden*" OR Any Field: "motivat*" OR Any Field: "willing*" OR Any Field: "enthusias*"

**PubMed – 233 articles**
((((CLINICIAN* OR "HEALTH PERSONNEL" OR "STAFF" OR PROFESSIONAL* OR NURS* OR DOCTOR* OR PSYCHOLOGIST* OR WORKER* OR PSYCHIATRIST*)) AND (TRAINING OR TEACHING OR EDUCATION* OR PSYCHOEDUCATION* OR PSYCHO-EDUCATION* OR "EDUCATIONAL PROGRAM" OR "EDUCATIONAL PROGRAMME" OR WORKSHOP*)) AND ("PERSONALITY DISORDER" OR "PERSONALITY DISORDERS" OR "PERSONALITY DISORDERED")) AND (ATTITUD* OR EMPATH* OR SYMPATH* OR COMPASSION* OR OPTIMIS* OR HOPEFUL* OR CONFIDEN* OR MOTIVAT* OR WILLING* OR ENTHUSIAS*)

**EMBASE – 390 articles**
('clinician*' OR 'health personnel' OR 'staff' OR 'professional*' OR 'nurs*' OR 'doctor*' OR 'psychologist*' OR 'worker*' OR 'psychiatrist*') AND ('training' OR 'teaching' OR 'education*' OR 'psychoeducation*' OR 'psycho-education*' OR 'educational program*' OR 'workshop*') AND 'personality disorder*' AND ('attitud*' OR 'empath*' OR 'sympath*' OR 'compassion*' OR 'optimis*' OR 'hopeful*' OR 'confiden*' OR 'motivat*' OR 'willing*' OR 'enthusias*')

**Web of Science – 298 articles**
(CLINICIAN* OR “HEALTH PERSONNEL” OR STAFF OR PROFESSIONAL* OR NURSE* OR DOCTOR* OR PSYCHOLOGIST* OR WORKER* OR PSYCHIATRIST*) AND (TRAINING OR TEACHING OR EDUCATION* OR PSYCHOEDUCATION* OR PSYCHO-EDUCATION* OR “EDUCATIONAL PROGRAM*” OR WORKSHOP*) AND “PERSONALITY DISORDER*” AND (ATTITUD* OR EMPATH* OR SYMPATH* OR COMPASSION* OR OPTIMIS* OR HOPEFUL* OR CONFIDEN* OR MOTIVAT* OR WILLING* OR ENTHUSIAS*)

**PROQUEST – 207 articles**
(("CLINICIAN*" OR "HEALTH PERSONNEL" OR "STAFF" OR "PROFESSIONAL*" OR "NURS*" OR "DOCTOR*" OR "PSYCHOLOGIST*" OR "WORKER*" OR "PSYCHIATRIST*") AND ("TRAINING" OR "TEACHING" OR "EDUCATION*" OR "PSYCHOEDUCATION*" OR "PSYCHO-EDUCATION*" OR "EDUCATIONAL PROGRAM*" OR "WORKSHOP*") AND "PERSONALITY DISORDER*" AND ("ATTITUD*" OR "EMPATH*" OR "SYMPATH*" OR "COMPASSION*" OR "OPTIMIS*" OR "HOPEFUL*" OR "CONFIDEN*" OR "MOTIVAT*" OR "WILLING*" OR "ENTHUSIAS*"))

## Appendix C – CLR: Critical Appraisal Skills Programme (CASP) tool - adapted

| | | | |
|---|---|---|---|
| **A)** | **Are the results of the study valid?** | | |
| 1 | *Did the study address a clearly focused issue?* | | |
| | - Clearly states an aim to improve professional attitudes towards personality disorder | Yes | + 1 |
| | - Unclear aim | Can't tell | 0 |
| | - Study has a dual focus | No | -1 |
| 2 | *Was the cohort recruited in an acceptable way? (Representativeness)* | | |
| | - Clearly states that participants have contact with people with a diagnosis of personality disorder or small sample size | Yes | + 1 |
| | - Unclear | Can't tell | 0 |
| | - Clearly states that participants do not have contact with people with a diagnosis of personality disorder | No | -1 |
| 3 | *Was there any participation bias?* | | |
| | - Clearly states that participation was compulsory or randomised to groups that included a control condition | Yes | + 1 |
| | - Unclear | Can't tell | 0 |
| | - Cleary states that participation was voluntary and no control condition | No | -1 |
| 4 | *Was the exposure adequately measured to minimise bias?* | | |
| | - Cleary states that intervention followed a published protocol | Yes | + 1 |
| | - Unclear | Can't tell | 0 |
| | - Cleary states that intervention deviated from that planned | No | -1 |
| 5 | *Was the outcome adequately measured to minimise bias?* | | |
| | - Cleary states that the outcome measure used were valid and reliable | Yes | + 1 |
| | - Unclear or validated measures that have been adapted | Can't tell | 0 |
| | - Clearly states that the outcome measures used were not valid and reliable | No | -1 |
| 6 | *Have the authors identified all important confounding factors?* | | |
| | - Clearly states identification of (gender, professional role, length of experience, baseline score, prior training) as potential confounders (score for each) | Yes | + 1 |
| | - Unclear or doesn't identify confounders | Can't tell | 0 |
| | - Identified but does not take into account in the analysis | No | -1 |
| 7 | *Was the follow up of subjects long enough?* | | |
| | - Clearly states that follow up is 6 months of more | Yes | + 1 |
| | - Unclear | Can't tell | 0 |
| | - Follow up is less than 6 months | No | -1 |
| 8 | *Was the follow up of subjects complete enough?* | | |
| | - Clearly reports loss to follow up and controls for this in the analysis | Yes | + 1 |
| | - Unclear | Can't tell | 0 |
| | - Does not report loss to follow up or does not include for this I the analysis | No | -1 |
| **B)** | **What are the results?** | | |
| 9 | *Do you believe the results?* | | |
| | Consider effect sizes, potential confounding and overall methodological quality. | Yes | + 1 |
| | | Can't tell | 0 |
| | | No | -1 |
| **C)** | **Will the results help locally?** | | |
| 10 | *Do the results of this study fit with other available evidence?* | | |
| | - Clearly compares results to previous research | Yes | + 1 |
| | - Unclear | Can't tell | 0 |
| | - Does not compare results to previous research | No | -1 |

## Appendix D - CLR: Quality Assessment

| | Clear Focus | Representativeness | Participation bias | Accurate Exposure | Accurate Outcome Measurement | Confounder: Gender | Confounder: Profession | Confounder: Experience | Confounder: Baseline score | Confounder: Prior training | Follow up long enough | Follow up completeness | Believability | Fit with other evidence | QUALITY SCORE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Clarke et al. (2015b) | 1 | 1 | -1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 9 |
| Clarke et al. (2015a) | 1 | 1 | -1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 8 |
| Fraser (2001) | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | -1 | 1 | 1 | 0 | 8 |
| Commons Treloar & Lewis (2008) | 1 | 1 | -1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | -1 | n/a | 0 | 1 | 4 |
| Miller & Davenport (1996) | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | -1 | 0 | 0 | 0 | 4 |
| Commons Treloar (2009) | 1 | 1 | 1 | 0 | 0 | -1 | 1 | 1 | -1 | 1 | 1 | -1 | -1 | 0 | 3 |
| Clark, Fox & Long (2014) | 1 | 1 | -1 | 0 | 0 | -1 | 1 | 1 | 0 | 1 | -1 | 0 | 0 | 1 | 3 |
| Knaak et al. (2015) | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | -1 | n/a | 0 | 0 | 2 |
| Maltman & Hamilton (2011) | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | -1 | 0 | -1 | 0 | 2 |
| Polnay et al. (2015) | 1 | -1 | 1 | 0 | 1 | 0 | n/a | 0 | 0 | 0 | -1 | n/a | 0 | 0 | 1 |
| Krawitz (2004) | 1 | 0 | 1 | 0 | -1 | 0 | 1 | 0 | 0 | 0 | 1 | -1 | -1 | 0 | 1 |
| Ebrahim et al. (2016) | 1 | 0 | -1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | -1 | -1 | 1 | 0 |
| Shanks et al. (2011) | 1 | 1 | 0 | 0 | -1 | -1 | 0 | 0 | 0 | 0 | -1 | n/a | 0 | 1 | 0 |
| Keuroghlian et al. (2016) | 1 | 0 | -1 | 0 | -1 | -1 | 0 | 1 | 0 | 0 | -1 | n/a | 0 | 1 | -1 |
| Welstead et al. (2017) | -1 | 0 | -1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | -1 | n/a | -1 | 1 | -1 |
| Bruce et al. (2017) | -1 | -1 | 1 | 0 | 0 | -1 | 0 | 1 | 0 | 0 | 1 | -1 | -1 | 0 | -2 |
| Lamph et al. (2014) | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -1 | -1 | -1 | 0 | -2 |
| Stringer et al. (2015) | -1 | -1 | -1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | -1 | -1 | -2 |
| Davies et al. (2015) | 1 | 0 | -1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -1 | -1 | -1 | 0 | -3 |
| Woodward, Jones & Martin (2009) | -1 | -1 | 0 | 0 | -1 | 0 | n/a | 0 | 0 | 0 | -1 | n/a | -1 | 0 | -5 |

**Appendix E – SIP: Journal of Family Therapy Author Guidelines**

**Manuscript Format**

1. Manuscripts should allow for 'blind/anonymised' refereeing and **must not** contain author names or any identifiable data.

2. Manuscripts **must** be typed in double spacing throughout, including quotation, notes and references in the following order:

- Title Page: to contain the title of the paper, word count, suggested running head (short title for your paper), key words, author names, affiliations and contact details for the corresponding author.
- Abstract: on a separate sheet, the title to be repeated followed by a summary of not more than 150 words. The suggested running head should also be present. *For tips on optimizing your abstract for search engines please click here*.
- Practitioner Points: two to six bullet points of no more than 180 characters each (including spaces), up to a total of 480 characters.
- Organisation of the text: see copy of Journal for the format currently in use.
- Figures, tables, etc.: All figures and tables should be numbered with consecutive arabic numerals, have descriptive captions and be mentioned in the text. They should be kept separate from the text but an approximate position for them should be indicated. These will need to be uploaded separately. Please supply figures in the format in which they were created, if possible.
- References (in text): These should be indicated by the name and date e.g. 'Carr (2009)'. If more than two authors are listed, cite the reference as 'McHugh et al. (2010)'. Quotations should include page numbers. Websites should also be cited in this way, with a full reference appearing in the References section (see below). Please check all websites are live and the links are correct at time of submission.
- References: Should be listed at the end of the paper in alphabetical order according to the first author and be complete in all details following the APA style of referencing.
    - **Articles**: Altschuler, J. (2015). Whose illness is it anyway? On facing illness as a couple. Journal of Family Therapy, 37(1), 119-133.
    - **Chapters**: Burnham, J. (2012). Developments in the Social GRRRAAACCEEESSS: visible-invisible and voiced-unvoiced. In I.B. Krause (Ed.), Culture and Reflexivity in Systemic Psychotherapy. Mutual Perspectives (pp 139-163). London: Karnac.
    - **Books**: Burck, C., & Daneil, G. (2010). Mirrors and Reflections. Process of Systemic Supervision. London: Karnac.
    - **Web pages** (no author or date identified): Counting the cost: caring for people with dementia on hospital wards. (n.d.) Retrieved from http://alzheimers.org.uk/site/scripts/ documents_info.php?documentID=1199. [Cite in text as (“Counting the costs”, n.d.)]

3. The word limit, excluding abstract and practitioner points will vary depending on the type of paper you are submitting. Please refer to the 'Advice to Authors' section below.

4. Style: Whilst Journal style is generally formal, originality in presentation does not necessarily preclude publication if clarity and readability is thereby enhanced. Sexist language forms are unacceptable.

Your manuscript will be returned to you if you fail to conform to these requirements.

**Case material and Confidentiality**

*Journal of Family Therapy* readers particularly welcome papers which link theory and practice, and such papers are often enhanced by case material.

The Author takes responsibility for anonymising material in order to protect client confidentiality. All possible identifying information must be altered. Another way of protecting confidentiality is by presenting composite case material, made up of different aspects from a number of similar cases.

Do not identify any participants without consent or write about them in any way that identifies them to the public or other participants without consent.

**Every paper that contains case material must be accompanied by:-**

- A statement in the letter to the Editor from the Author(s) specifying whether the material presented is disguised/generic/composite; or
- A statement in the letter to the Editor that the Author has gained signed consent from patients/clients or teachers/students authorizing publication of the material. Please note that upon signing the Author Agreement the Author becomes liable for any third party information collated and takes complete responsibility for preparing the work and gaining the relevant permissions and consent.

**Research Presentation** (3,000-6,000 words)

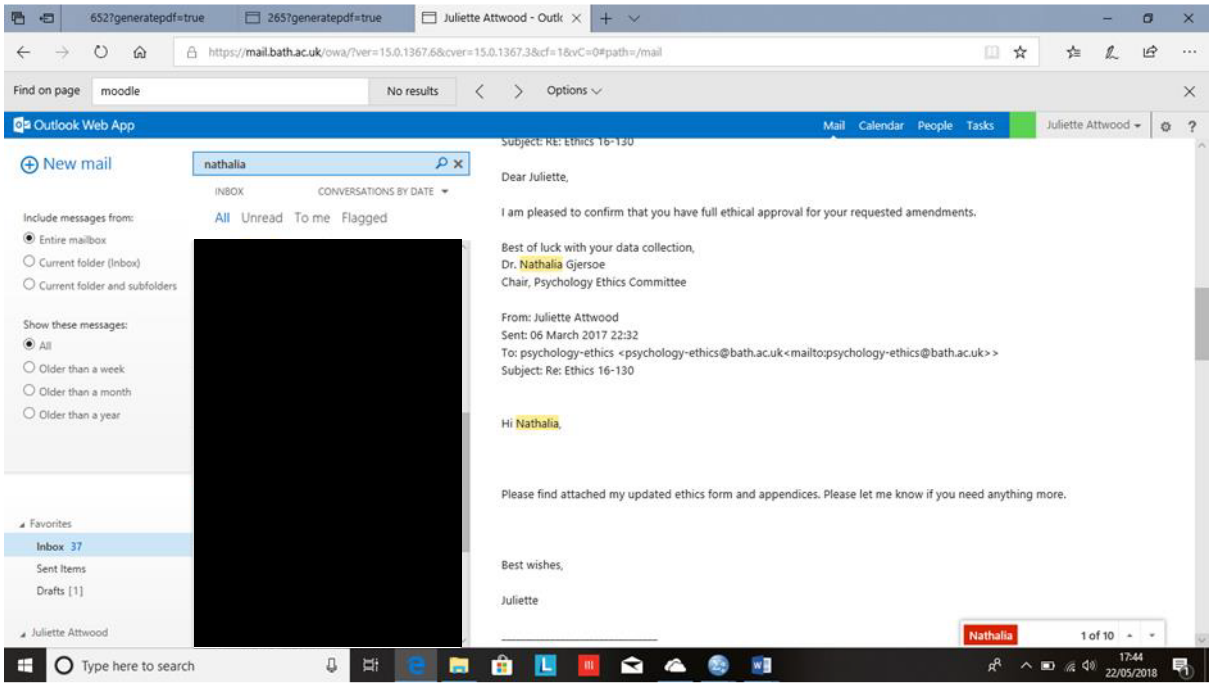
A research paper should include:

- An introduction to the principal concepts and theoretical issues relevant to the study
- Previous work
- Description of methodology including participants
- Results/Findings
- Discussion of results, including implications for future research and practice

**Additional Notes to Authors:**

- JFT has an international readership, so spell out details that might be unfamiliar to the non UK field.
- JFT welcomes the linking of previous literature in a substantive, explanatory sense and therefore advises authors to reference other papers where possible.

## Appendix F – SIP: Ethical Approval



**Appendix G – SIP: Topic Guide for Interviews**

| | |
|---|---|
| 1. | BACKGROUND/GOALS |
| a) | **What were your expectations before attending the group?**<br>Prompts: What did you hope to get out of it? Did you have any goals in mind? How much did you know about the group before starting? |
| 2. | EXPERIENCE/ACCEPTABILITY |
| a) | **Could you please tell me about what is was like for you attending the group?**<br>Prompts: Did you find anything about the experience helpful? Did you find anything about the experience unhelpful? Did you find any topics particularly helpful? Did you find any topics unhelpful? How comfortable where you sharing in the group? Was there anything about the group that made it easier/harder to share? |
| 3 | EFFECTIVENESS |
| a) | **You told me at the start that your expectations before attending the group. We these met?**<br>Prompts: Could you give me an example please? |
| b) | **Do you think that attending the group has had an impact on your [son's/daughter's] substance misuse behaviour?**<br>Prompts: How do you think that attending the group made a difference? Can you give me an example please? |
| c) | **Do you think that attending the group has had an impact on your family relationships?**<br>Prompts: How do you think that attending the group made a difference? Can you give me an example please? |
| d) | **Do you think that attending the group has had an impact on your parenting?**<br>Prompts: How do you think that attending the group made a difference? Can you give me an example please? |
| e) | **Do you think that attending the group has had an impact on your personal wellbeing?**<br>Prompts: How do you think that attending the group made a difference? Can you give me an example please? |
| 4. | EXPERIENCE/ACCEPTABILITY |
| a) | **How did you feel when the group ended?**<br>Prompt: How was this dealt with? What follow up support have you received? Would you have liked more support after the group ended? |
| 5. | IMPROVEMENT |
| a) | **Is there anything that you think could be improved about the group?**<br>Prompt: How do you think that would improve things? Can you give me an example of what you think might be helpful? |
| | ANY THING ELSE? |
| 6. | **Is there anything else about the group that we haven't talked about that would be useful to mention?** |

## Appendix H – MRP: Behaviour Research and Therapy Author Guidelines

### Article structure

*Subdivision - unnumbered sections*
Divide your article into clearly defined sections. Each subsection is given a brief heading. Each heading should appear on its own separate line. Subsections should be used as much as possible when crossreferencing text: refer to the subsection by heading as opposed to simply 'the text'.

*Appendices*
If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly, for tables and figures: Table A.1; Fig. A.1, etc.

*Abstract*
A concise and factual abstract is required with a maximum length of 200 words. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

*Highlights*
Highlights are mandatory for this journal. They consist of a short collection of bullet points that convey the core findings of the article and should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point). You can view example Highlights on our information site.

*Keywords*
Immediately after the abstract, provide a maximum of 6 keywords, to be chosen from the APA list of index descriptors. These keywords will be used for indexing purposes.

**Appendix I – MRP: Adapted Imagery Interview**

**Interview Guide**

**Part 1) Introduction to the interview**

**Part 2) Relaxed situation #1**

Q1) What is the image?
Q2) What perspective is it experienced from?
Q3) Image characteristics

**Part 3) Social anxiety situation**

Q1) What is the social situation?
Q2) Anxiety rating
Q3) Experience of imagery
Q4) Frequency of imagery

Q5) What is the image?
Q6) What perspective is it experienced from?
Q7) Image characteristics

**Part 4) Relaxed situation #2**

Q1) What is the image?
Q2) What perspective is it experienced from?
Q3) Image characteristics

**Part 5) End of study debrief**

**Part 1) Introduction to the interview**

**Introduction**

Thank you so much for taking part in this research study. Do you have any initial questions after reading the information sheet? Ok, great. I have a script so that I say the same thing to everybody and at the start is a quick explanation of what we're going to do and then I'll check again if you have any questions before starting, does that sound OK?

Great, thank you.

We're interested in finding out more why some people get more anxious than others. One thing we know about anxiety is that people often have more worrying thoughts and mental images in their minds when they are anxious, and we're particularly interested in finding out more about the mental images that people sometimes have.

A mental image is a bit like a picture in your mind, or as if you can see something happening as if in a film. This is different to a verbal thought, when we use the sort of language we would use when we speak.

Does that difference make sense?

*[Optional prompt: As an example, a verbal thought might be 'I really like that TV programme!' which would run through your mind as words. A mental image might be picturing some of the characters or a scene in your mind.]*

In this interview, I'm going to ask you to think of a mental image and then ask you some questions about it. I'm going to ask you to do this three times. One of these mental images will be about when you feel anxious. You can choose to stop the interview at any point if this feels too uncomfortable. How would you let me know if you decide you want to stop the interview?

Do you have any questions?

Would you still like to take part?

Thanks! That's great. We'll start now.

**Part 2) Relaxed situation #1**

First, I'd like to talk to you about some of the things that go through your mind when you are relaxed. I'm going to ask you to think of something you do or somewhere you go that makes you feel happy or relaxed, and then ask you some questions about that situation.

Can you give me an example of a situation that makes you feel relaxed?

*[Optional prompt: Would you like to think about being at a beach or walking in some woods?]*

Q1)

Ok great. Close your eyes and try to relax. Take some slow, deep breaths; relax all your muscles and think about your relaxing place or activity. Try and make the image as vivid as possible, like in a film, and then when you're ready tell me what's happening. *[Repeat as necessary.]*

Q2)

In the image are you:

a) Looking out at the world from your eyes? or
b) Looking at yourself as if you were watching yourself on TV?

Keep the image in your mind. I'm now going to ask you to rate your image on some different characteristics using a 10-point scale.

Q3)

a) How vivid is the image? Vivid means it's very bright, you can see it very clearly, and you can see details easily. On a 0-10 scale (0 not at all vivid, 10, extremely vivid), how vivid is the image?

b) How much can you control the image? That means, how easily can you make the image do what you want it to do? On a 0-10 scale (0 can't control it at all, 10, can control it completely), how much can you control the image?

c) How 'real' does the image feel? That means, does it feel like you are actually there right now? On a 0-10 scale (0 doesn't feel real at all, 10, feels completely real), how real does the image feel?

d) How upsetting do you find this image? On a 0-10 scale (0 not upsetting at all, 10, extremely upsetting).

e) Do you feel like you want to leave the image? On a 0-10 scale (0 don't want to leave at all, 10, strongly want to leave), how much do you want to leave the image?

f) How anxious do you feel in the image? On a 0-10 scale (0 not anxious all, 10, extremely anxious).

OK that's great, now open your eyes. We are finished with that image. I am going to ask you to do the same thing and ask the same questions two more times, is that OK?

**Part 3) Social anxiety situation**

Next, I'd like to talk to you about some of the things that go through your mind when you are in a social situation that makes you feel worried or anxious.

Q1)

Can you give me an example of a social situation makes you feel anxious?

*[Optional prompt: a lot of people experience some anxiety when they have to stand up and speak in front of other people, or if they have to go to a party where they don't know anyone. Which of these would cause you the most anxiety?]*

Q2)

On a 0-100% scale, how anxious might this situation make you feel at the worst point?

Usually when people are feeling anxious a mixture of thoughts and images go through their minds. Like I said at the start, I'm especially interested in the mental images that people sometimes have.

Q3)

When you are in a social situation that makes you feel anxious do you experience any mental images?

What type of images do you experience?

Q4)

How often do you experience images when you are in a social situation that makes you anxious if 1 is never, 2 is sometimes, 3 is often, and 4 is always? *[If the participant choses 2 or above but previously said no, go back and ask again 'What types of images do you experience?']*

Q5)

Now close your eyes and to bring to mind a mental image of the social situation that makes you feel anxious. Try and make the image as vivid as possible, like in a film, and when you're ready tell me what's happening. *[Repeat previous instructions as necessary.]*

Q6)

In the image are you:

a) Looking out at the world from your eyes? or
b) Looking at yourself as if you were watching yourself on TV?

Keep the image in your mind. I'm now going to ask you to rate your image on some different characteristics using a 10-point scale.

Q7)

a) How vivid is the image? Vivid means it's very bright, you can see it very clearly, and you can see details easily. On a 0-10 scale (0 not at all vivid, 10, extremely vivid), how vivid is the image?

b) How much can you control the image? That means, how easily can you make the image do what you want it to do? On a 0-10 scale (0 can't control it at all, 10, can control it completely), how much can you control the image?

c) How 'real' does the image feel? That means, does it feel like you are actually there right now? On a 0-10 scale (0 doesn't feel real at all, 10, feels completely real), how real does the image feel?

d) How upsetting do you find this image? On a 0-10 scale (0 not upsetting at all, 10, extremely upsetting).

e) Do you feel like you want to leave the image? On a 0-10 scale (0 don't want to leave at all, 10, strongly want to leave), how much do you want to leave the image?

f) How anxious do you feel in the image? On a 0-10 scale (0 not anxious all, 10, extremely anxious).

OK that's great, now open your eyes. We are finished with that image. I am going to ask you to do the same thing and ask the same questions once more about when you feel relaxed, Is that ok?

**Part 4) Relaxed situation #2**

I'd like to go back to talking about some of the things that go through your mind when you are relaxed. I'm going to ask you again to think of something you do or somewhere you go that makes you feel happy or relaxed, and then ask you some questions about that situation. It's fine if you want to use the one you used before but sometimes people like to choose a different situation. What would you like to do?

Can you give me an example of a situation that makes you feel relaxed?

*[Optional prompt: Would you like to think about being at a beach or walking in some woods?]*

Q1)

Close your eyes and try to relax. Take some deep breaths and relax all your muscles and think about your relaxing place or activity. Try and make the image as vivid as possible, like in a film, and then when you're ready tell me what's happening. *[Repeat previous instructions as necessary.]*

Q2)

In the image are you:

a) Looking out at the world from your eyes? or
b) Looking at yourself as if you were watching yourself on TV?

Keep the image in your mind. I'm now going to ask you to rate your image on some different characteristics using a 10-point scale.

Q3)

a) How vivid is the image? Vivid means it's very bright, you can see it very clearly, and you can see details easily. On a 0-10 scale (0 not at all vivid, 10, extremely vivid), how vivid is the image?

b) How much can you control the image? That means, how easily can you make the image do what you want it to do? On a 0-10 scale (0 can't control it at all, 10, can control it completely), how much can you control the image?

c) How 'real' does the image feel? That means, does it feel like you are actually there right now? On a 0-10 scale (0 doesn't feel real at all, 10, feels completely real), how real does the image feel?

d) How upsetting do you find this image? On a 0-10 scale (0 not upsetting at all, 10, extremely upsetting).

e) Do you feel like you want to leave the image? On a 0-10 scale (0 don't want to leave at all, 10, strongly want to leave), how much do you want to leave the image?

f) How anxious do you feel in the image? On a 0-10 scale (0 not anxious all, 10, extremely anxious).

**Part 5) End of study debrief**

Now open your eyes. We're finished with that image and that's the end of the study. Thank you so much for your time. Do you have any questions about what we did or what happens next?

*[Flexible protocol for ending the interview]*

1) If the participant has no questions and their anxiety rating has returned to the same level reported in the first imagery exercise, end the interview and send debrief sheet via email.

2) If the participant has no questions and their anxiety has not returned to the same level reported in the first imagery exercise, ask the following:

- Do you feel more anxious than when we started?
- Is there anything that you can do to help you to relax now?
- Do you feel ready to finish?

When the participant reports that they feel ready to finish, end the interview and send debrief sheet via email.

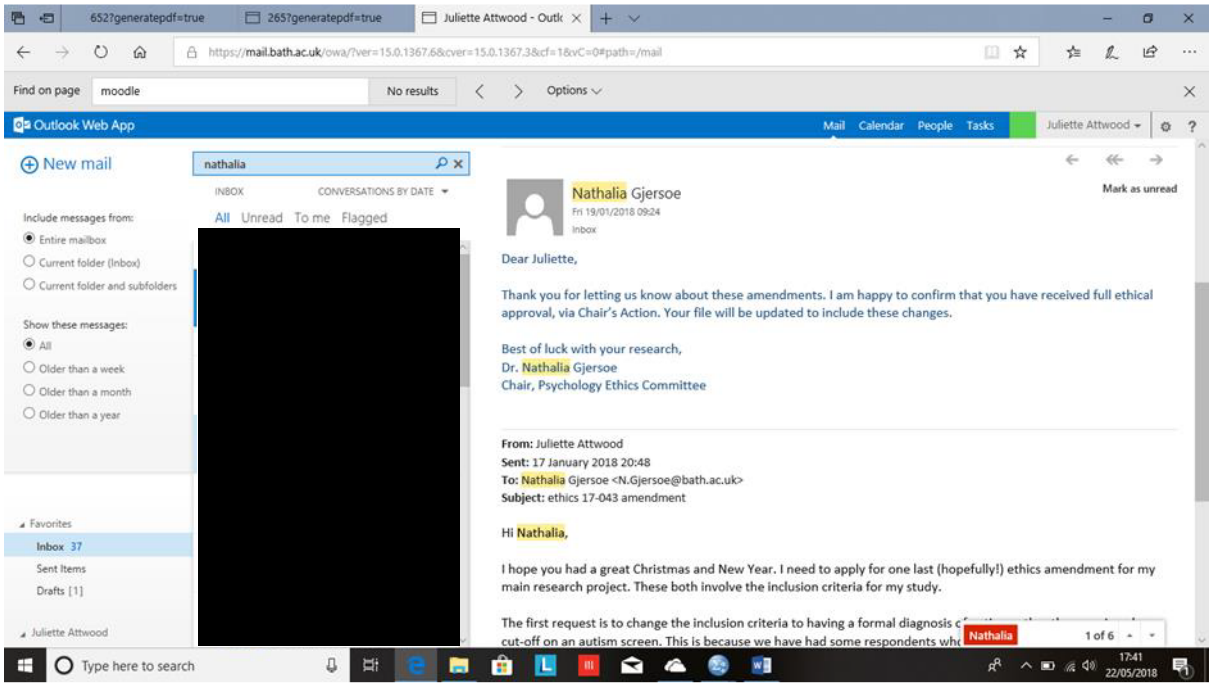
3) If the participant reports that they have been very upset by the interview or are experiencing a lot of distress, ask the following additional questions:

- What support do you have?
- Do you have friends, family, or services that support you?
- Is any of that support available now?
- When is your next contact with them?

Advise participants to book an appointment with their GP if they report that they do not receive any support or to call the Samaritans if they feel they need immediate support. When the participant reports that they feel ready to finish, end the interview and send debrief sheet via email.

4) If the participant discloses thoughts of harming themselves or anyone else, and this suggests an immediate risk, advise them to call 999 and explain our obligation to pass their name and telephone number onto the police. Send debrief sheet via email in collaboration with research supervisor.

## Appendix J – MRP: Ethical Approval



**Appendix K – MRP: Demographic data for the Survey Sample and Interview Sample**

| | | Survey Sample (n = 262) | | Interview Sample (n = 62) | | | |
|---|---|---|---|---|---|---|---|
| Demographic | Category | Freq. | % | Freq. | % | $\chi^2$ | P |
| Age | 18-24 | 72* | 27.5 | 9* | 14.5 | 13.00 | .017 |
| | 25-34 | 88 | 33.6 | 20 | 32.3 | | |
| | 35-44 | 56 | 21.4 | 17 | 27.4 | | |
| | 45-54 | 37 | 14.1 | 8 | 12.9 | | |
| | 55-64 | 8* | 3.1 | 8* | 12.9 | | |
| Gender | Male | 68 | 26.0 | 19 | 30.6 | 7.41 | .048 |
| | Female | 175 | 66.8 | 35 | 56.5 | | |
| | Non-binary | 12* | 4.6 | 8* | 12.9 | | |
| Ethnicity | White/ Caucasian | 235 | 89.7 | 50 | 80.6 | 6.34 | .143 |
| | Asian | 8 | 3.1 | 2 | 3.2 | | |
| | Mixed-race | 4 | 1.5 | 3 | 4.8 | | |
| | Invalid | 1 | 0.4 | 0 | 0.0 | | |
| Education | GCSEs | 6 | 1.9 | 0 | 0.0 | 10.93 | .244 |
| | A-levels | 20 | 6.2 | 5 | 8.1 | | |
| | College | 45 | 17.2 | 10 | 16.1 | | |
| | Apprenticeship | 29 | 11.1 | 5 | 8.1 | | |
| | Diploma | 4 | 1.2 | 1 | 1.6 | | |
| | Bachelor's degree | 36 | 13.7 | 3 | 4.8 | | |
| | Master's degree | 74 | 28.2 | 17 | 27.4 | | |
| | Doctoral degree | 27 | 10.3 | 12 | 19.4 | | |
| | Other/ rather not say | 10 | 3.1 | 5 | 8.1 | | |
| Employment | Full time – paid | 71 | 27.1 | 18 | 29.0 | 5.22 | .718 |
| | Part time – paid | 52 | 19.8 | 13 | 21.0 | | |
| | Part time – voluntary | 2 | 0.8 | 0 | 0.0 | | |
| | Unemployed – looking | 10 | 3.8 | 3 | 4.8 | | |
| | Unemployed – not looking | 24 | 9.2 | 2 | 3.2 | | |
| | Retired | 39 | 14.9 | 7 | 11.3 | | |
| | Student | 4 | 1.5 | 1 | 1.6 | | |
| | Other/ Rather not say | 39 | 14.9 | 14 | 22.6 | | |
| Age at diagnosis | Under 18 years | 62* | 23.7 | 7* | 11.3 | 6.22 | .043 |
| | 18 years or older | 199 | 76.0 | 54 | 87.1 | | |
| | Not sure | 1 | 0.4 | 1 | 1.6 | | |